
Control v1

(Home Edition)

User Manual

Home Automation Software for
Microsoft Windows[®] XP
Media Center Edition 2005

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Introduction

This purpose of this document is to provide installation instructions for mControl home automation software from Embedded Automation (<http://www.embeddedautomation.com>).

mControl software allows you to control your home from the comfort of your couch or remotely from any internet access point.

System Requirements

Software Requirements

mControl has two main components. Currently, they are installed on the same machine.

mControl (Automation) Service

- Operating System
 - o Windows 2000
 - o Windows XP Home Edition
 - o Windows XP Professional
 - o Windows XP Media Centre Edition 2005,
- Microsoft.NET framework version 1.1 (or higher)
 - o To download visit: <http://msdn.microsoft.com/netframework/downloads/default.aspx>

mControl (User Interface) Client

- Windows XP Media Centre Edition (MCE) 2005 (including Roll-up 2)
- Internet Explorer 6.0 (or higher)

Media Center Interface

Screen Settings

- Minimum 1024 x 768 screen setting

Supported Media Center Extenders

- Xbox Media Center Extender
- HP x5400 Media Center Extender
- Linksys Media Center Extender (Model WMCE54G)

Supported Hardware

mControl supports a variety of automation systems. The following section summarizes the list of automation systems supported.

Security Camera Support

Support for D-Link Internet cameras, including:

- DCS-2100+
- DCS-5300W

IR Support

Support for Global Caché Network Adapter technologies, including:

- GC-100-xx Network Adapters
- GC-IRL (IR Learner) – used to input IR commands
- GC-IRE (IR Extender) – used to input IR commands

	Embedded Automation is proud to support Global Caché products as part of mControl. For more information on Global Caché, visit http://www.globalcache.com/ Image Courtesy of Global Caché © 2005
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INSTEON Protocol

	Embedded Automation is proud to support the INSTEON protocol as part of mControl. For more information on INSTEON, visit http://www.insteon.net/ Image Courtesy of SMARTHOME © 2003
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Support for INSTEON adapters, including:

- 2414U PowerLinc USB Controller (USB)



There are different versions of the 2414U PowerLinc adapters. The following table describes the versions and their compatibility with mControl:

Adapter Version	Adapter Firmware Version	Adapter SALad Version (download software area)	Comments
v1.6	v2.12	Preferably TimerCoreApp v1.00 or higher	Preferred for mControl compatibility.
v1.4 or below	v2.08 or below	CoreApp	Will work, but some INSTEON commands may be lost due to non-queuing capability of the older firmware. We recommend that you contact Smarthome/INSTEON to upgrade to the v1.6 of the Adapter.

Support for most INSTEON devices, including:

- 2476D - SwitchLinc V2 Dimmer
- 2476S - SwitchLinc V2 Relay
- 2456D3 - LampLinc V2 3-Pin
- 2456S3 - ApplianceLinc V2 3-Pin
- 2486D – KeypadLinc V2

Compatible with most INSTEON transceivers and remotes, including:

- 2430 - ControlLinc
- 2442 - SignalLinc RF

Two-way Communication of INSTEON Devices Using Linking

mControl automatically links all entered INSTEON devices within the 2414U INSTEON Adapter's on-board device database (called "PLC Database"). This ensures that mControl can listen to incoming INSTEON messages related to the device and update the status for that device if it changes.

If devices are not linked, mControl can recognize status changes only *if these changes are initiated by mControl* – status changes from external sources, say a ControlLinc, will not be recognized.

mControl uses the following methods to update the PLC Database:

- Upon start-up, mControl tries to link all the INSTEON addresses within the mControl database.
- Upon entry of an INSTEON device using the Add/Edit Device page, mControl will attempt linking of the new device
- Upon deletion of an INSTEON device using the Edit Device page, mControl will attempt to remove the link of the deleted device
- Upon modification of an INSTEON address using the Edit Device page, mControl will attempt to remove the link of the unused device and link the address of the new device

mControl uses the following methods to update the status of devices stored in the mControl database and shown on the screen:

- Upon start-up, immediately after the linking process, mControl inquires for the status of each device and listens for the acknowledgement message
- Upon each command or macro, mControl listens for the acknowledgement message
- If the device is linked in the PLC Database, mControl is also able to listen for acknowledgements sent by the device as a response to the initiating device.

If mControl is not updating status of the device, the following problems may exist:

- The device did not link during start-up or the add/edit process. It is recommended to either re-start mControl, re-save the device using the Edit Device page or attempt manual linking.
- There is significant traffic or noise on the powerline and the 2414U adapter did not receive the status (or acknowledgement) message. Consider moving the adapter away from noisy electrical components (e.g., computer), relocate any X10 devices that are in the adapter's proximity (they can interfere with normal processing), reduce the traffic on your INSTEON network by reducing the number of external links.

To enable/disable automatic linking and status checking upon start-up of mControl, modify the STARTUP_CHECK_LINK and STARTUP_CHECK_STAT parameters within the mServer.exe.xml file located in the "mServer.exe.xml" file, located in the "C:\Program Files\Embedded Automation\mControl\server" directory.

```
<adapters>
  <adapter base="2414U" load="Y" assembly="mServerAdapters.dll"
    driver="EmbeddedAutomation.mServer.Adapters.Insteon2414Manager">
    <aparam name="DISPLAY-AS" value="2414U"/>
    <aparam name="OTHER-NAMES" value="2414U"/>
    <aparam name="DESCRIPTION" value="INSTEON PowerLinc USB adapter"/>
    <aparam name="SUPPORTS" value="INSTEON|X10"/>
    <aparam name="APROTOCOL" value="INSTEON"/>
    <aparam name="PORTS" value="USB"/>
    <aparam name="STARTUP_CHECK_LINK" value="true"/>
    <aparam name="STARTUP_CHECK_STAT" value="true"/>
  </adapter>
```

Recognizable values are:

- *true* – enable automatic linking or status checking upon start-up
- *false* – disable automatic linking or status checking upon start-up



Please note, if you have a large database, upon start-up the automatic linking and status checking process may take a few minutes. Normally, this is unnoticeable because this happens before an mControl client is accessed.



*For the SwitchLinc 2476x modules, Tapping or Double Tapping the paddle will *NOT* update the module's status within mControl. This is because these modules do not generate any status change messages in this use case. However, pressing and holding (to dim/brighten) will generate an INSTEON message and hence, mControl *WILL* recognize the status change. The SwitchLinc 2476x modules must be linked to the 2414U INSTEON Adapter for mControl to recognize any changes.*



*For the KeypadLinc 2486x modules, Tapping or Double Tapping the (Primary) ON or OFF buttons will *NOT* update the module's status within mControl. This is because these modules do not generate any status change messages in this use case. However, pressing and holding (to dim/brighten) the (Primary) ON or OFF buttons will generate an INSTEON message and hence, mControl *WILL* recognize the status change.. In addition, mControl will also update the status of any devices linked to the Secondary (labeled A, B, C and D at the factory) buttons upon toggling of these buttons. Again, the 2486x KeypadLinc module must be linked to the 2414U INSTEON Adapter for mControl to recognize any changes.*

X10 to INSTEON Translator

This feature allows incoming X10 addresses to directly affect a corresponding INSTEON address. This is particularly useful for cases where hybrid systems exist and rely on a X10-based back-end controller and INSTEON-based lighting control. This is done at the “driver” level of mControl – no automation or macros are required.

Under the “2414U” <adapter> element within the XML file multiple parameters may be added to map an X10 address to a specific INSTEON address. The format of this parameter is:

```
<aparam name="MapX10ToINST" value="{X10 address}{separator}{INSTEON address}">
```

Recognizable values are:

- *X10 address* – required X10 address to listen for and translate into an INSTEON address (does not have to be in the mControl database)
- *separator* – single character to separate the X10 and INSTEON address. Valid characters are ‘:’, ‘-’, ‘=’, ‘ ’ or ‘|’.
- *INSTEON address* – INSTEON address to translate the X10 address to (does not have to be in the mControl database)

In the following sample, two X10 addresses, B3 and B4, are mapped to INSTEON addresses, 00.EF.F0 and 00.EF.F1, respectively.

```
<adapter base="2414U" load="Y" assembly="mServerAdapters.dll"
  driver="EmbeddedAutomation.mServer.Adapters.Insteon2414Manager">
  <aparam name="DISPLAY-AS" value="2414U"/>
  <aparam name="OTHER-NAMES" value="2414U"/>
  <aparam name="DESCRIPTION" value="INSTEON PowerLinc USB adapter"/>
  <aparam name="SUPPORTS" value="INSTEON|X10"/>
  <aparam name="APROTOCOL" value="INSTEON"/>
  <aparam name="PORTS" value="USB"/>
  <aparam name="MapX10ToINST" value="B3=00.EF.F0"/>
  <aparam name="MapX10ToINST" value="B4=00.EF.F1"/>
</adapter>
```

X10 Protocol

Support for most X10 adapters, including:

- CM11A Adapter (Serial)
- CM11U Adapter (Serial)
- CM12U Controller (Serial)
- CM15A "ActiveHome" (USB)
- CM17A "Firecracker" Adapter (Serial)

Support for most X10 modules, including:

- AD10 – Din Rail Mounted Appliance Module
- AM12U – Plug-in Appliance Module
- AM466 – Appliance module
- LD11 – Din Rail Mounted Lamp Module
- LM12U – Plug-in Lamp Module
- LM14A – 2-Way Lamp Module
- LM15 – Screw-in Lamp Module
- LM465 – Lamp module
- PAM21 – 2-Way, 2-Pin Appliance Module
- RLM20 - Remote Controlled Lamp Module
- RSC15 - Remote Controlled Chime
- SSR227 – Super Socket Wall Outlet
- W467 - Dimmable Wall Switch
- WS12A – Decorator Dimmer Wall Switch
- WS14A – Decorator Style Companion Wall Switch

Compatible with most X10 transceivers, including:

- RR501 - Transceiver Module
- TM13U - RF Transceiver
- TM751 - RF Transceiver

Compatible with most X10 sensors and remotes, including:

- HR12A - PalmPad Remote Control
- KR19A - Remote Control Module (Keychain)
- KR22A - Remote Control Module
- MS14A - EagleEye™ Indoor/Outdoor Motion Sensor
- MS16A - ActiveEye™ Indoor/Outdoor Motion Sensor
- RSS18 - Remote Wall Switch
- SS13A - Remote Wall Switch
- SS15A - Remote Wall Switch
- UR73A - Universal Remote with X10

Adapter Support

The following table summarizes mControl's support for the various automation adapters:

Adapter	Protocol	Command Send	Command Receive
2414U PowerLinc	INSTEON and X10	Supported	Supported <i>Used to update INSTEON and X10 module status. Can also be used to trigger Macros</i>

Adapter	Protocol	Command Send (Power line)	Command Receive (Power line)	Command Send (RF)	Command Receive (RF)
CM11A, CM11U, CM12U	X10	Supported	Not supported	Not supported	Not supported
CM15A	X10	Supported	Supported <i>Used to update X10 module status</i>	Not Supported	Supported <i>Used for Device Macro triggers</i>
CM17A	X10	N/A	N/A	Supported <i>Requires X10 transceiver</i>	Not supported

Limitations and Recommendations

- All adapters must be attached to the PC where the mControl Automation Service is installed.
- Embedded Automation does not recommend systems with multiple adapters co-located on the same PC as the mControl Automation Service.
 - If there are multiple receiving adapters (e.g., 2414 PowerLinc and CM15A), redundant received commands may lead to erroneous results.
 - If there are multiple sending adapters, commands sent over different adapters around the same time may lead to erroneous results due to network congestion and collisions.

Device Support

INSTEON Device Behavior

The following table summarizes INSTEON device behavior:

Previous State	Command	Result
OFF	ON	ON – 100%
OFF	BRIGHT *	ON – (0+x)%, where x is defined by the mControl dim/bright granularity for the device
OFF	DIM *	OFF
OFF	OFF	OFF
ON	ON	ON – at previous level
ON	BRIGHT *	ON – (y + x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	DIM *	ON – (y – x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	OFF	OFF

** For non-appliance devices only*

X10 Device Behavior

The following table summarizes X10 device behavior:

Previous State	Command	Result
OFF	ON	ON – 100%
OFF	BRIGHT *	ON – 100%
OFF	DIM *	ON – 100%
OFF	OFF	OFF
ON	ON	ON – at previous level
ON	BRIGHT *	ON – (y + x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	DIM *	ON – (y – x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	OFF	OFF

** For non-appliance devices only*

Installation Steps

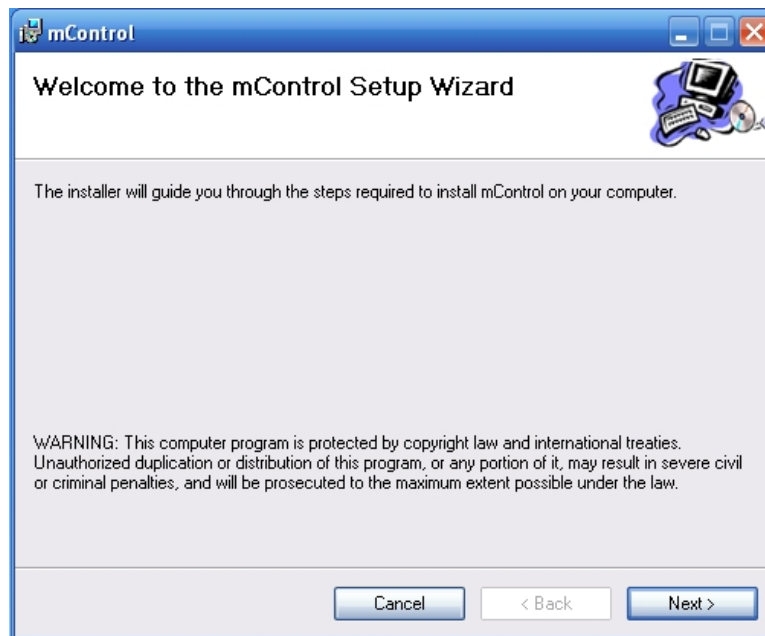
Step 1 - Install mControl software

Run mControl setup file (mControlSetup.msi) you received from Embedded Automation.



It is highly recommended that you delete all content from your Temporary Internet Files location, before installation, to avoid any conflicts with previous content.

The installation process can take several minutes and will automatically install all of the software required for mControl.



During installation, you will be asked if you would like to install 3rd party software. Please select the options you will need in your mControl application. Available options include:

- ***CM15A X10 Adapter software (ahscript_setup.exe) – this will install the low-level drivers to enable the CM15A X10 adapter.***

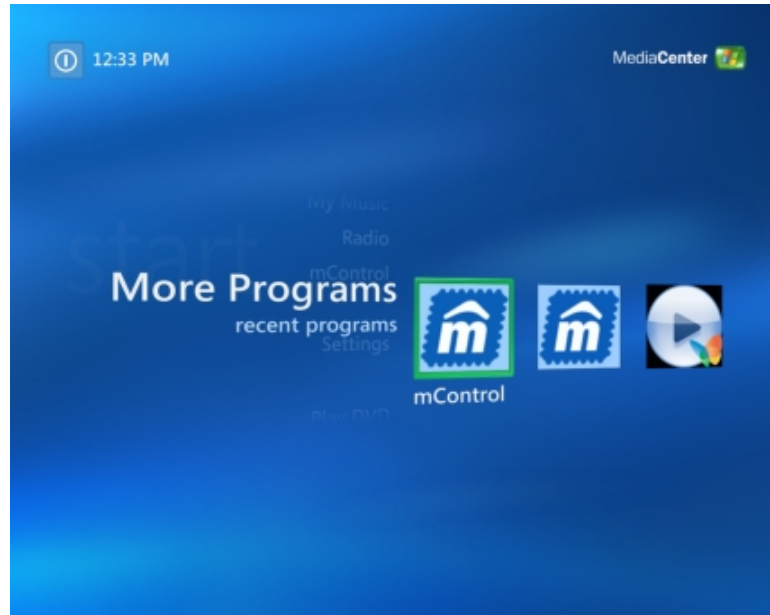


During installation, you will be asked if you would like to install for “Everyone” or “Just me”. Select “Everyone” if you intend to use a MCE Extender or make the software available for other users.

If you have a previous version of mControl, the installer will automatically upgrade to the most recent version, without having to uninstall the previous version. Any changes, for example, upgrading to the latest version of the mControl database, is also automatically done as part of the installation process.

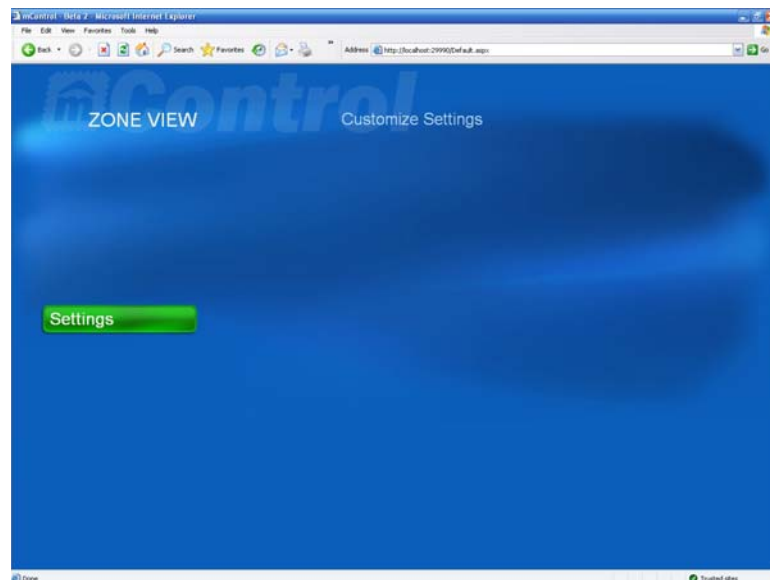
Step 2 - Start mControl software

You can access mControl by selecting “More Programs” area within “Media Center”.



You can also start mControl by using the Windows “Start” button, then the “All Programs” option, then the “mControl” folder and finally, the “mControl” program.

You can also use Internet Explorer. Open Internet Explorer (IE) and enter the following line in the address bar, <http://localhost:29990/Default.aspx>.



Step 3 – Activating mControl

mControl Trial Version

mControl v1 (Home Edition) is provided for a 30-day trial from the Embedded Automation web site. A copy-protection mechanism manages this limitation. mControl will show the number of days remaining in the trial when the “Zone View” screen is accessed. The trial version of mControl offers full software functionality for the duration of the trial. Upon expiration, mControl will continue to operate as usual, however, no automation commands will be sent to devices. Any re-installation or tampering with system date and/or the mControl license will cause automatic expiration of the copy protection. Please contact Embedded Automation to extend your 30-day trial by emailing support@embeddedautomation.com.

Activating mControl

To activate your software, you will have to purchase a software license. Upon completing your purchase, you will be emailed a new license file, or if you purchased through a retailer, your license will be on the CD. Instructions will be provided on where to save this new license file. After saving the license to the proper location, you must reboot. Upon re-starting mControl, you will be automatically directed to activate the license. You will be able to do this via the web (recommended), if you have an internet connection, or by phone, if you do not have an internet connection. This activation process will remove all restrictions from the software.



The license will be associated to the machine on which mControl is installed. To move the license to another machine, you will have to contact Embedded Automation.

Using mControl with a Dial-up Internet Connection

Since the mControl UI client is a web-based interface, Windows and Internet Explorer assume an active Internet connection. It is possible to use mControl without an active Internet connection. If you are running mControl without an active Internet connection, for example, if you normally use dial-up to connect to the Internet. Use the following guidelines:

- Use the mControl short cuts provided under the “All Programs ...” section. This will work for either running mControl using Internet Explorer or the Media Center interface. For Media Center users, you can also select mControl from the “More Programs” area.
- Please ensure that the “Work Offline” setting is not selected. This option is found under the “File” menu option in Internet Explorer. If “Work Offline” is checked, you may receive frequent reminders to connect to the Internet if there is no active Internet connection already established.
- For dial-up customers, we recommend using the “Dial whenever a network connection is not present” setting. This setting can be set using Internet Explorer “Tools” menu option, then selecting “Internet Option” under the “Connection” tab.

Using mControl Software

mControl Components

mControl (User Interface) Client

The mControl Client has been designed for Microsoft XP Media Center Edition (MCE) 2005. All operation is available via the “10 foot interface”. The user interface has been designed to be fully functional with a remote control. Text entry is handled via triple-tap input.

However, the mControl Client is also viewable in a browser. The user interface can work with a mouse. Text entry can also be accomplished via keyboard.

mControl (Automation) Service

The mControl Service, as the name implies, manages the automation sub-system for mControl. Also, the mControl Service provides the base user interface to the mControl Client.

The mControl Service runs as a Windows Service called “mHome Automation Service”. Use Windows Administrative Tools for Services to “stop” and “start” the mControl Service. The process name for the mControl Service is “mServer.exe”.

mControl Client and Service Interaction

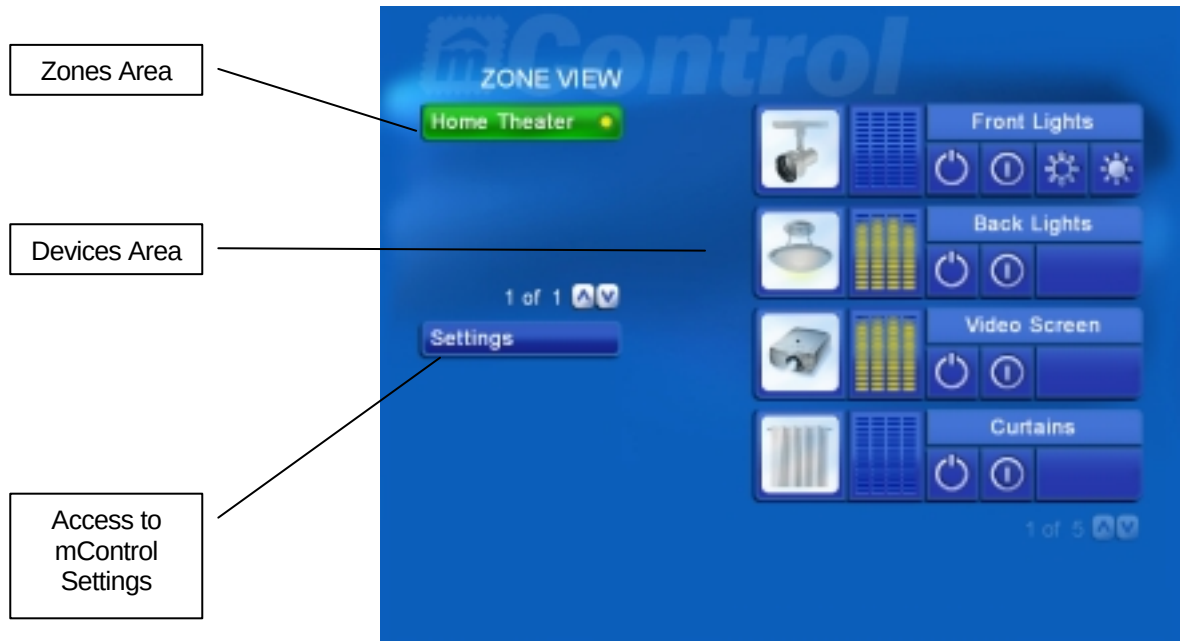
The mControl Service must be running for the mControl Client to be operational.

The installer assumes that the mControl Client and Service are installed on the same machine. However, the mControl Automation Service supports multiple clients. Currently, mControl has a limitation of 5 clients.

mControl User Interface

Zone View Screen

The Zone View screen, which is considered the “main menu” of mControl, provides a summary of all the defined zones and all devices within a selected zone. From this screen, you can access all of your Zones and Devices.



Zones Area

This area provides a list of all the user-defined Zones. Each Zone can hold 0 or more Devices. Zones naming is very flexible – a zone can represent:

- Actual rooms in house – for example, “Home Theater”
- A functional area of house – for example “Main Floor”
- A generic container name – for example “My Macros”

The “active” zone, or the one currently selected, is denoted by a highlighted yellow radio button. To select a new active room, cursor to it and press OK.

If there are more than 4 zones, it is possible to scroll through them by moving the cursor to the zones area and pressing either UP/DOWN or PAGE UP/PAGE DOWN.

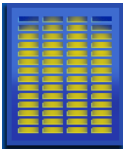
Devices Area

This area provides a list of all the devices for the “active” room. Each device will have:

- An icon or image
- A status area – this area represents the current status of the device and is updated in real-time.
- The device name
- Function buttons (e.g., ON, OFF, DIM, BRIGHT, SHOW, PLAY, etc.)

Commands are issued to the device by cursoring to the function and pressing OK. For example, to turn a light on, cursor to the OFF button (denoted by O) and press OK.

Function Button	Operation	Supported With
	Turn ON device	- INSTEON 2456D3 - LampLinc V2 3-Pin - INSTEON 2456S3 - ApplianceLinc V2 3-Pin - INSTEON 2476D - SwitchLinc V2 Dimmer - INSTEON 2476S - SwitchLinc V2 Relay - X10 AM466 – Appliance module - X10 LM14A – 2-Way Lamp Module
	Turn OFF device	- X10 LM15 – Screw-in Lamp Module - X10 LM465 – Lamp module - X10 PAM21 – 2-Way, 2-Pin Appliance Module - X10 RSC15 - Remote Controlled Chime - X10 SSR227 – Super Socket Wall Outlet - X10 W467 - Dimmable Wall Switch
	DIM device 25%	- INSTEON 2456D3 - LampLinc V2 3-Pin - INSTEON 2476D - SwitchLinc V2 Dimmer - X10 LM14A – 2-Way Lamp Module
	BRIGHTEN device 25%	- X10 LM465 – Lamp module - X10 W467 - Dimmable Wall Switch
	Execute Manual Macro's Action List	Manual Macro
	View Camera	- D-Link cameras

Status Image	Meaning
	Device is OFF
	Device is ON at 100% value
	Device is ON at 50% value
	Device is ON at nominally 0% value



Other increments are available, depending on the granularity of dim/bright selected for the device.

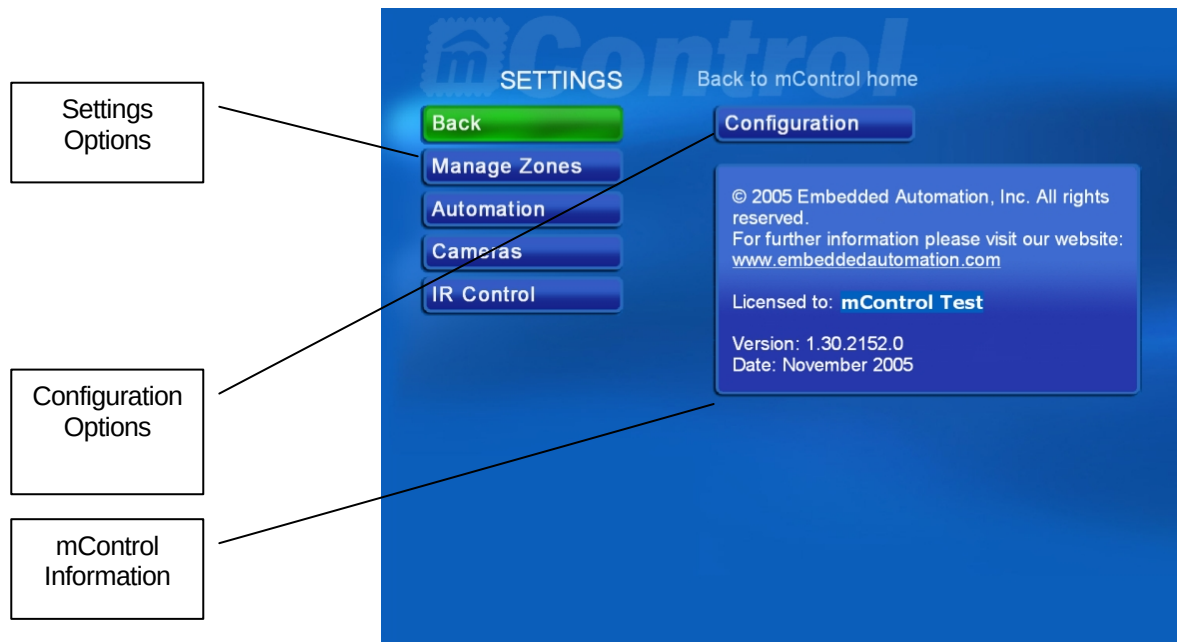
If there are more than 4 devices, it is possible to scroll through them by moving the cursor to the devices area and pressing either UP/DOWN or PAGE UP/PAGE DOWN.

Access to mControl Settings

The “Settings” button provides access to the configuration section of mControl.

Settings Screen

The Settings screen provides information about mControl and access to the various mControl configuration screens.



Settings Options

The Settings Options buttons provide the following functions:

- **Home** – goes back to the Zone View Screen
- **Manage Zones** – allows configuration of the defined zones and associated devices
- **Automation** – allows modification of existing macros or creation of macros
- **Camera** – allows configuration of cameras
- **IR Control** – allows configuration of IR functionality

Configuration Options

Configuration settings like mControl skins and location information (for sunrise/sunset calculations).

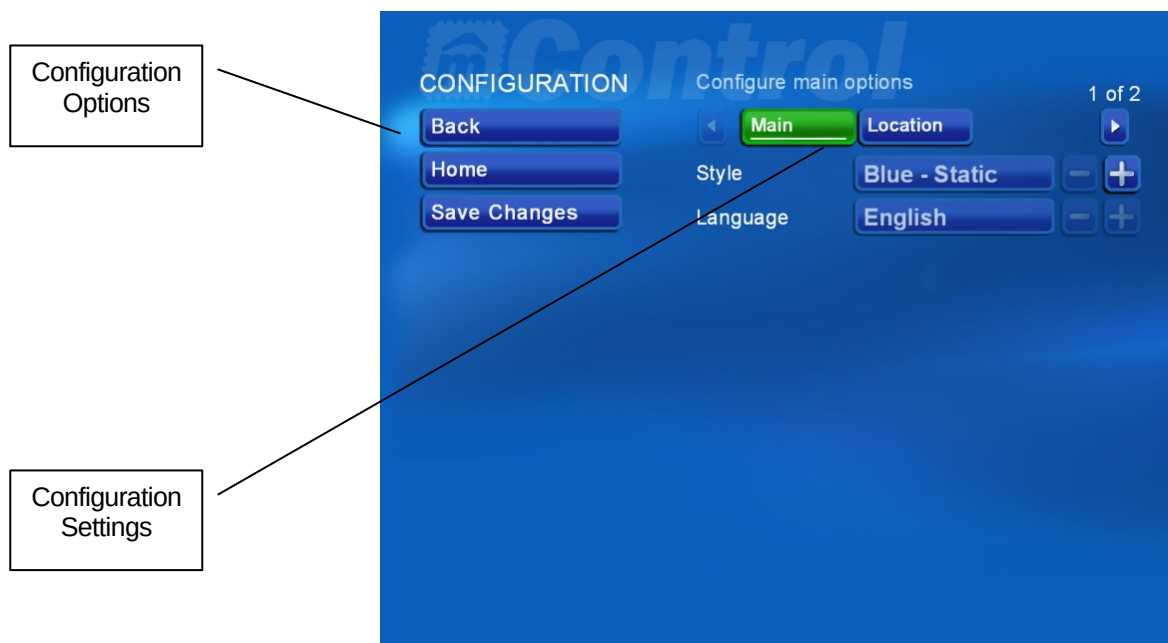
mControl Information

This section provides the following information on mControl:

- mControl copyright and license information
 - o If the license is a 30-day trial license, the “Licensed to” field will be “Embedded Automation”
 - o If the license has been purchased, but not activated, the “Licensed to” field will be the purchaser’s name, with a parenthetical reference that activation is required
 - o If the license has been purchased and activated, the “Licensed to” field will be the purchaser’s name
- mControl version, build number and date of build information

Configuration Screen

The Configuration Screen allows modifying the personal configuration settings of mControl.

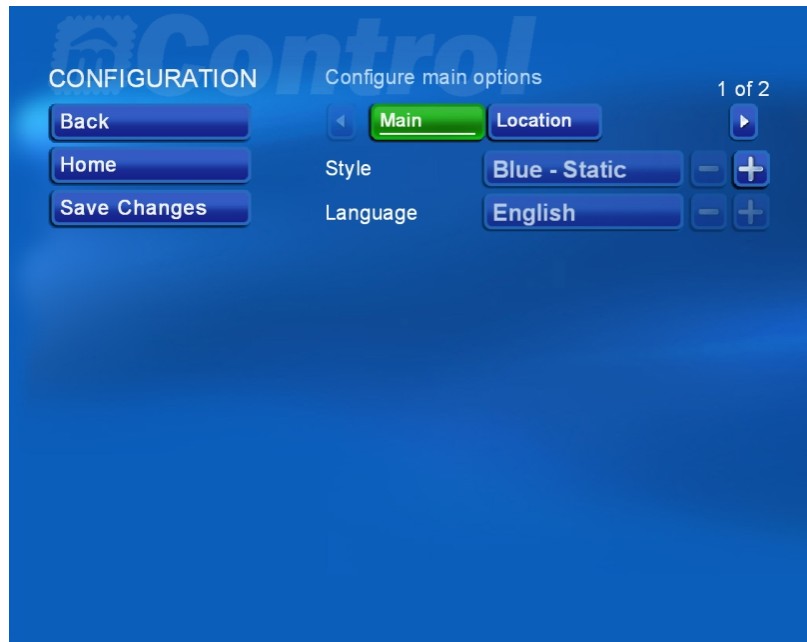


Configuration Options

The Configuration Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save Changes** – saves the configuration changes and returns to the Settings screen

Configuration Settings (Main)



This section provides the following configuration options:

- **Style** – the user interface style (or “skin”)

Styles	Comments
Blue – Static	Default style - recommended for Media Center use.
Blue – Dynamic	Provides animated images based on blue background. If you are using Media Center, please be aware that animated graphics may cause performance issues because of Media Center's scaling and rendering algorithms.



If the style is changed, please empty Temporary Internet Files in Internet Explorer to ensure the previous style is removed from the cache.

- **Language** – the language used within mControl. Currently only English is supported.

Configuration Settings (Location)

This section allows users to define their location. Location information is used to calculate sunrise and sunset values.

- **Latitude** – in Degrees and Minutes
- **North or South of Equator** – the current location's relative position to the Equator
- **Longitude** – in Degrees and Minutes
- **East or West of Greenwich** – the current location's relative position to Greenwich

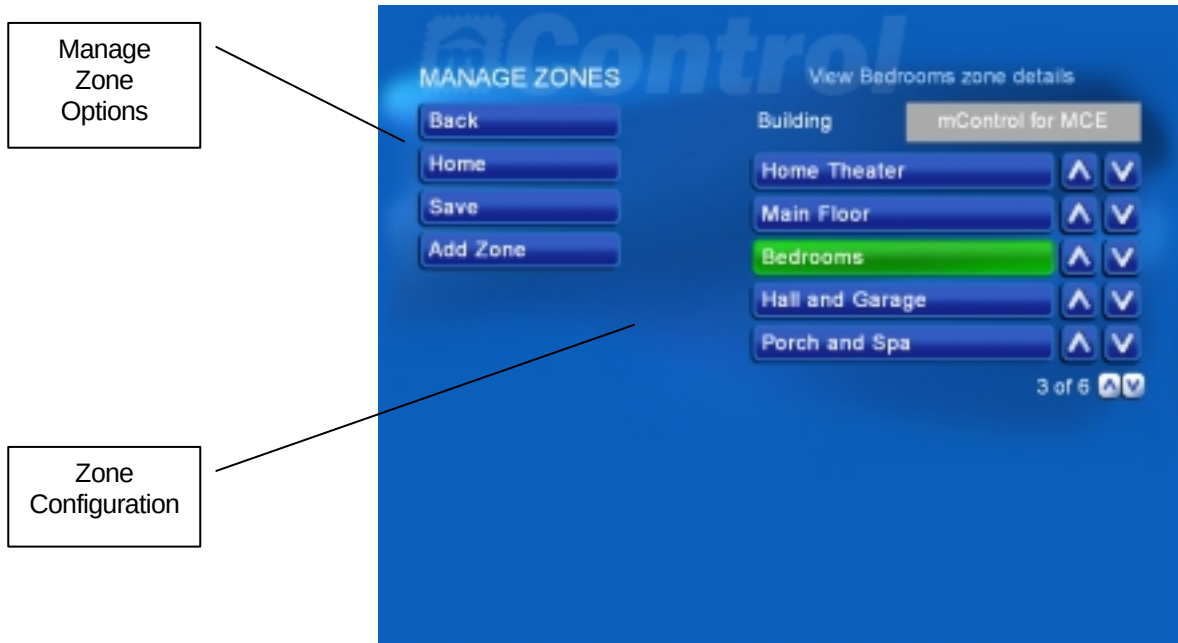
To determine the Latitude and Longitude of your location, we recommend:
<http://www.bcca.org/misc/qiblih/latlong.html>.

This information is used to calculate sunrise and sunset times for your location. The sunrise and sunset times can be used as triggers for mControl macros (see section “Macro Configuration – Time”).

mControl uses the Civil (-6° from the horizon) parameters to arrive at sunrise and sunset times, based on the enter location.

Manage Zones Screen

The Manage Zones Screen provides a summary of all the defined zones and allows changing the order for display in the Zone View page.



Manage Zone Options

The Manage Zone Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the current display order of the zones
- **Add Zone** – create a new zone

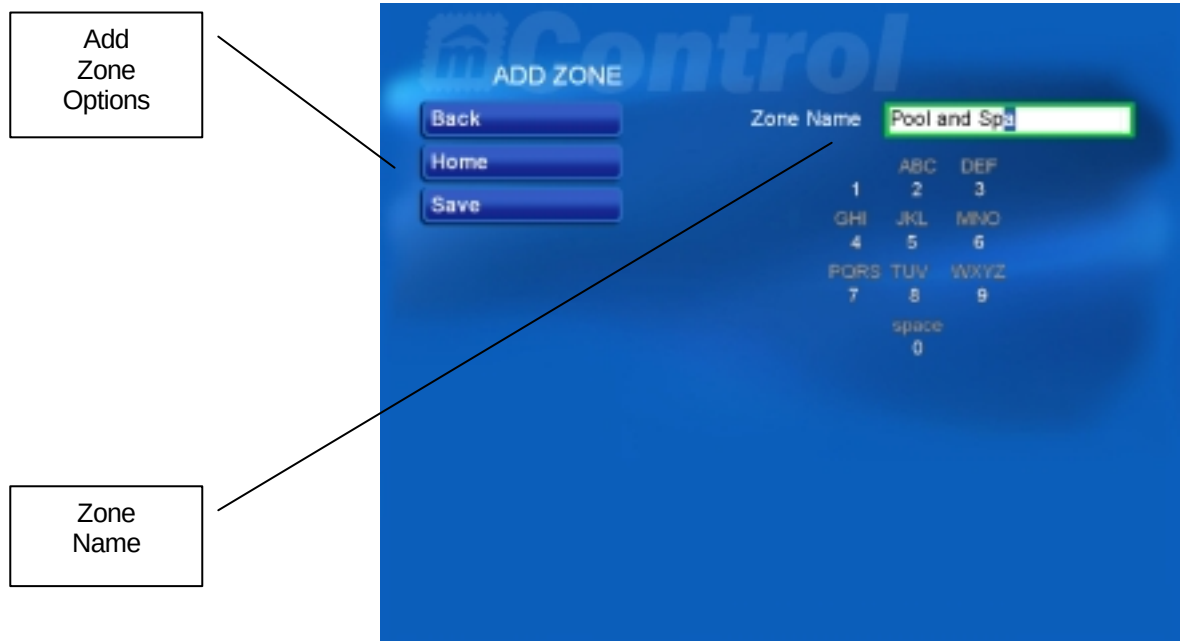
Zone Configuration

This section provides the following options:

- Zone Edit – by cursoring to a zone name and pressing OK, access to the Edit Zone Screen is provided
- Zone Display Order – by pressing on the UP/DOWN buttons, the display order of the zones for the Zone View Screen is modified

Add Zone Screen

The Add Zone Screen allows the creation and naming of a new zone.



Add Zone Options

The Add Zone buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the new zone

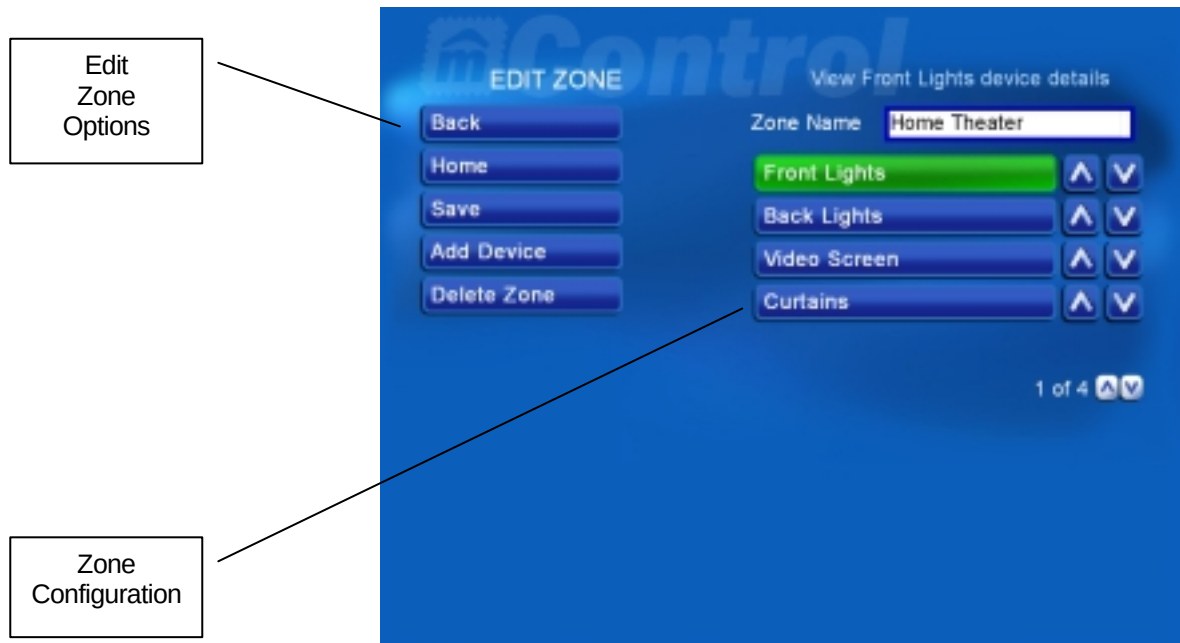
Zone Name

This section provides the following configuration options:

- **Name** – the name of the Zone (Text entry, up to 16 characters)

Edit Zone Screen

The Edit Zone Screen allows modifying the configuration of an existing zone.



Edit Zone Options

The Edit Zone Options buttons provide the following functions:

- **Back** – goes back to the Manage Zones Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current zone and returns to the Manage Zones Screen
- **Add Device** – adds a device to the current zone; goes to the Edit Device Screen
- **Delete Zone** – deletes the current zone and returns to the Manage Zones Screen. A Zone can not be deleted if is associated with a Macro or Actions.

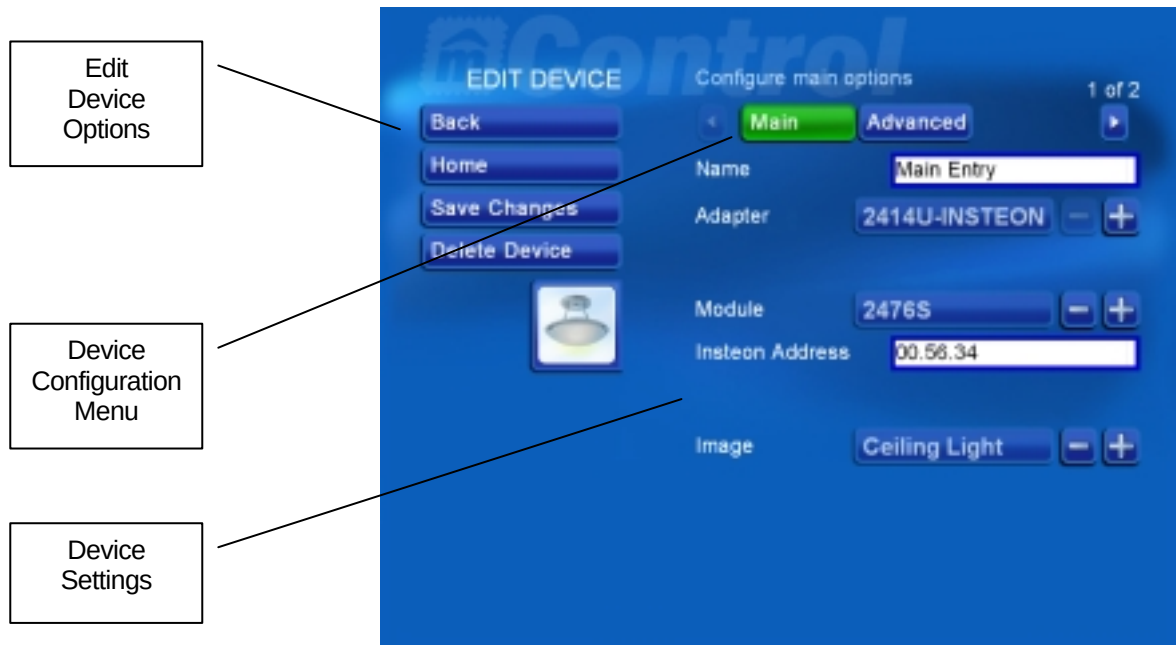
Zone Configuration

This section provides the following configuration options:

- **Name** – the name of the zone (Text entry, up to 16 characters)
- **Device Edit** – by cursoring to a device name and pressing OK, access to the Edit Device Screen is provided
- **Device Display Order** – by pressing on the UP/DOWN buttons, the display order of the devices for the Zone View Screen is modified

Edit Device Screen

The Edit Device Screen allows modifying the configuration of an existing or new device.



Edit Device Options

The Edit Device Options buttons provide the following functions:

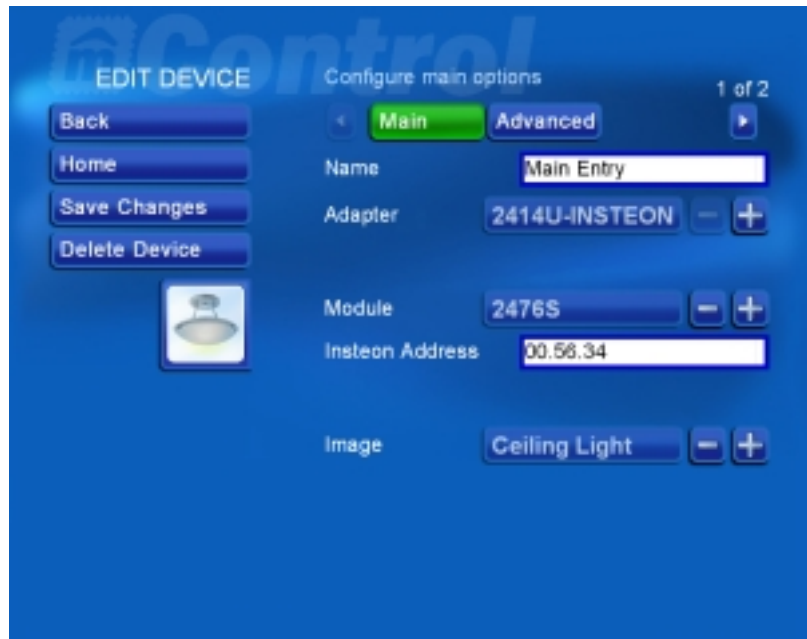
- **Back** – goes back to the Edit Zone Screen
- **Home** – goes back to the Zone View Screen
- **Save Changes** – saves the changes for the current device and returns to the Edit Zone Screen
- **Delete Device** – deletes the current device and returns to the Edit Zone Screen. A Device can not be deleted if it is associated with an Action within a Macro.

Device Configuration Menu

Use this menu system to access the various configuration settings for a device:

- **Main** – Define the address, adapter and image for the device
- **Advanced** – Set the update and dim/bright level for the device

Device Settings (Main)



This section provides the following configuration options:

- **Name** – the name of the device (Text entry, up to 16 characters)
- **Adapter** – the adapter used to communicate with this specific device, supported adapters include:

Adapter	Protocol	Interface	Comments
2414U PowerLinc	INSTEON	USB	
CM11A	X10	Serial	Use this selection for CM11U and CM12U operation
CM15A	X10	USB	Also known as ActiveHome Pro
CM17A	X10	Serial	Also known as Firecracker

- **Port** – the serial communication port to use. Valid ports are COM1, COM2, COM3 and COM4. This option is only available for serial adapters.
- **Module** – The INSTEON or X10 module used to control this specific device. The following modules are provided on the list:

Module	Protocol	Description
2456Dx	INSTEON	LampLinc V2 Dimmer
2456S3	INSTEON	ApplianceLinc V2 Switch 3-pin
2476D	INSTEON	SwitchLinc V2 Dimmer
2476S	INSTEON	SwitchLinc V2 Relay
AM466	X10	Appliance Module
LM14A	X10	2-way Lamp Module
LM15A	X10	SocketRocket Screw-In Lamp Module
LM465	X10	Lamp Module
PAM21	X10	2-way Appliance Module
RSC15	X10	Chime Module
SR227	X10	Super Socket Module
WS467	X10	Wall Switch Module



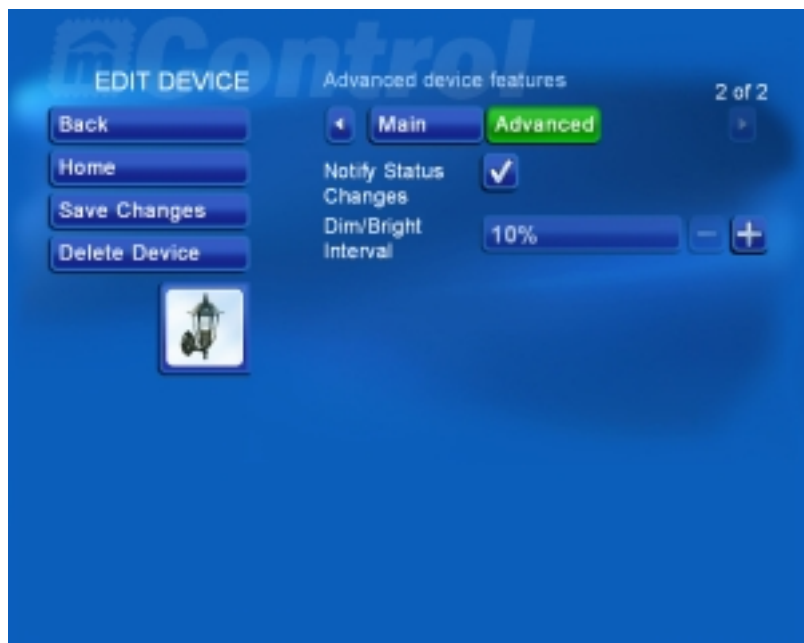
If you do not see the module you'd like to control on this list, you can try to choose a module that most closely resembles your module. For example, if the module you are using is an "appliance" type of module, you may try to control it by setting the device to be an "AM466" module. For additional assistance, please email support@embeddedautomation.com



All INSTEON devices added to mControl zones will automatically be added to the 2414U PowerLinc's PLC Database, thereby allowing the PowerLinc to recognize the device during 2-way communications. If the device is deleted from the mControl zone, it will be automatically removed from the PowerLinc's PLC Database. This eliminates the need for the user to do manual linking and unlinking.

- **Address** – If you have selected an INSTEON module, you will be required to provide an INSTEON address. The INSTEON address is in the form of xx.xx.xx, where xx is a number in the range of 0x00 to 0xFF. To find this address, check on the back of your INSTEON device.
- **House** – If you have selected an X10 module, you will be required to provide an X10 House Address (Spinner entry, Valid Settings: A through P)
 - o For convenience, mControl remembers the last House address provided
- **Unit** – If you have selected an X10 module, you will be required to provide an X10 Unit Address (Spinner entry, Valid Settings: 1 through 16)
- **Image** – User-selectable image for the device (Spinner entry, various images)

Device Settings (Advanced)

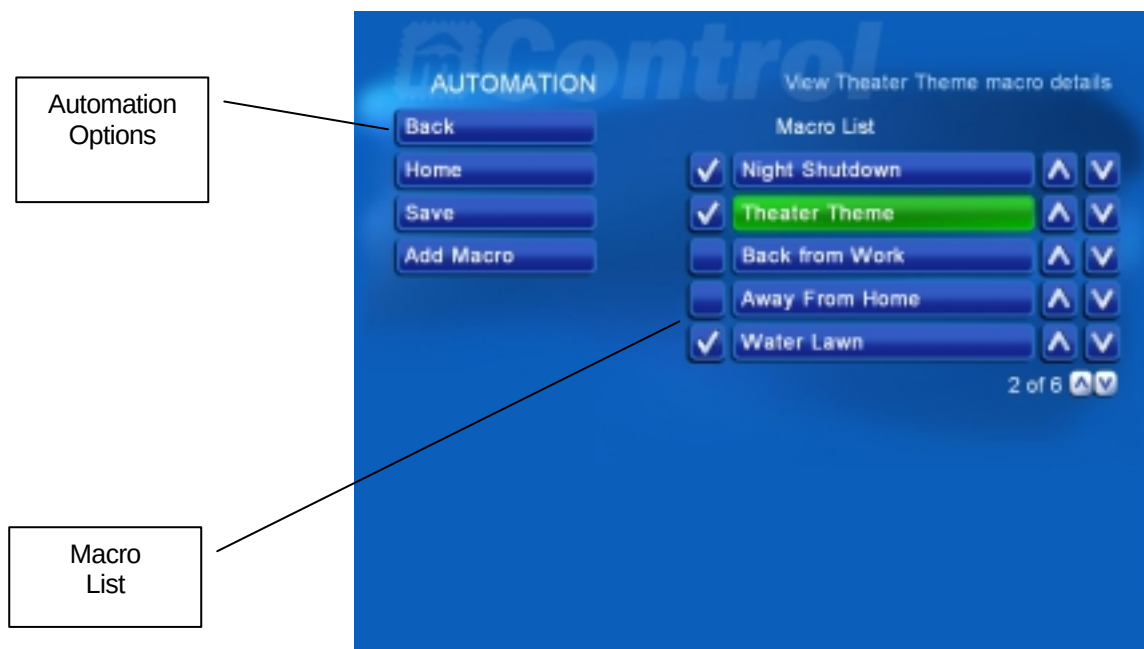


This section provides the following configuration options:

- **Notify** – *This feature will be available in future versions of mControl.*
- **Granularity** – Defines the granularity of each Dim/Bright command. For example, if you set this to 10%, the brightness levels available will be 10%, 20%, 30%, etc. Of course, this is dependent on each device's capability.

Automation Screen

The Automation Screen allows modifying the configuration of existing or new macros.



Automation Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save** – save the changes in the Macro ordering and return to Settings Screen
- **Add Macro** – allows a creation of a new macro on the Add a Macro page

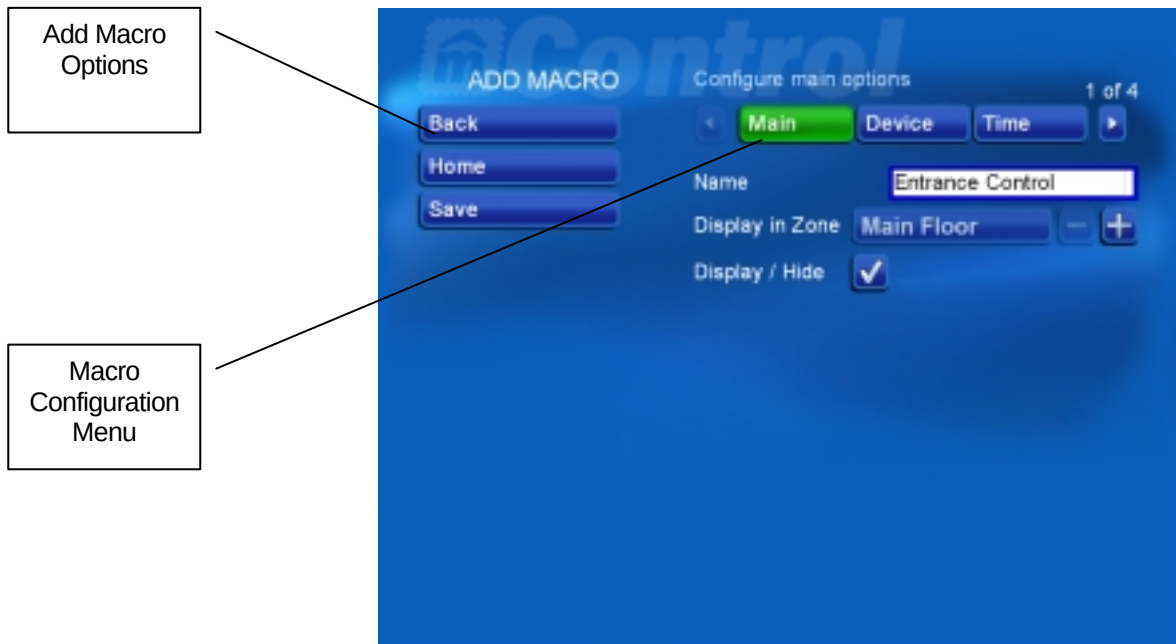
Macro List

This section provides the following configuration options:

- **Macro Enable** – by pressing on this checkbox, the Macro is enabled (with checkmark) or disabled (without checkmark)
- **Macro Edit** – by cursoring to a macro name and pressing OK, access to the Edit Actions Screen is provided
- **Macro Display Order** – by pressing on the UP/DOWN buttons, the display order of the devices for the Macros modified

Add Macro Screen

The Add Macro Screen allows for the creation of a new macro.



Add Macro Options

The Add Macro Options buttons provide the following functions:

- **Back** – goes back to the Automation Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current macro and returns to the Automation Screen

Macro Configuration Menu

Use this menu system to access the various configuration settings for a macro:

- **Main** – Define the name, zone and display status of the macro
- **Device** – Define the device triggers for this macro
- **Time** – Define time triggers for this macro
- **Schedule** – Define the days for which the macro is valid

Macro Configuration (Main)

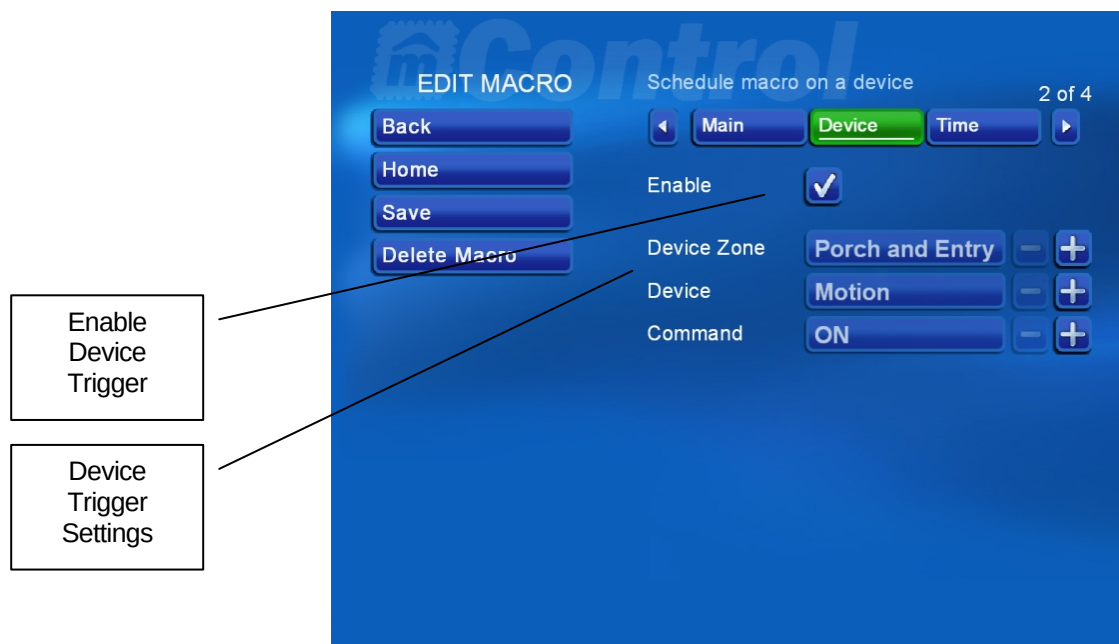


This section provides the following configuration options:

- **Name** – the name of the macro (Text entry, up to 16 characters)
- **Zone** – the zone in which the macro will show up in the Zone View screen
- **Display in Zone** – enable display of the macro in the selected zone

Macro Configuration (Device)

This section allows you to define a device trigger for the macro. This type of macro trigger is useful if you would like an INSTEON or X10 remote control to initiate a set of actions.

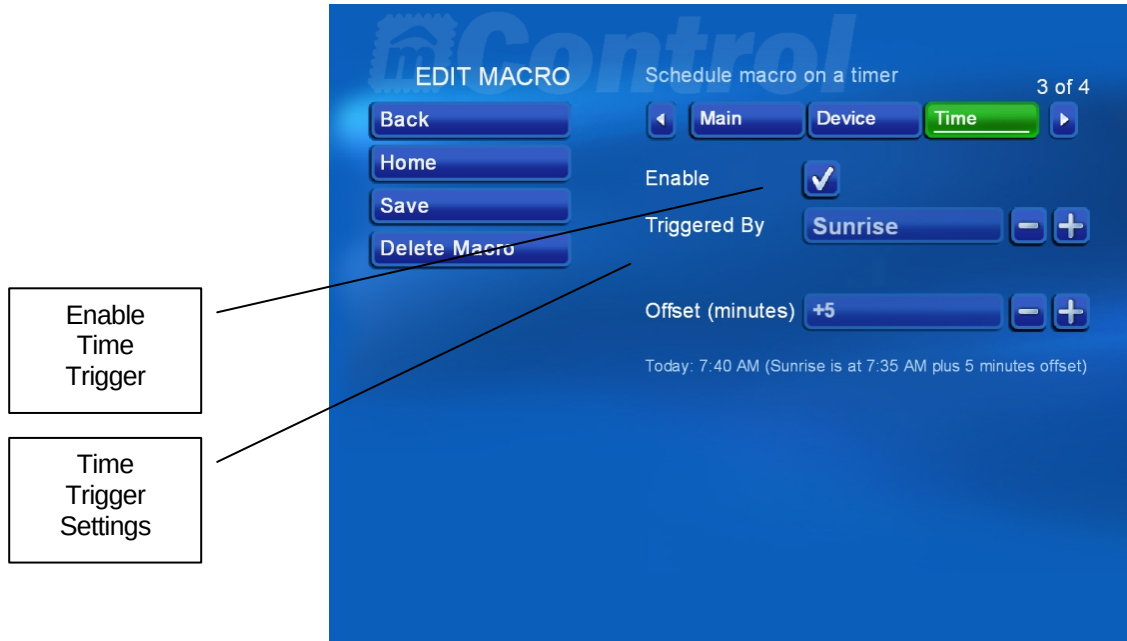


This section provides the following configuration options:

- **Enable** – Checking this option enables device triggering for this macro
- **Device Trigger Settings** – Define the device and its status change to be used as the trigger for this macro

Macro Configuration (Time)

This section allows you to define a time trigger for the macro. This type of macro trigger is useful if you would like to initiate a set of actions at a given time.



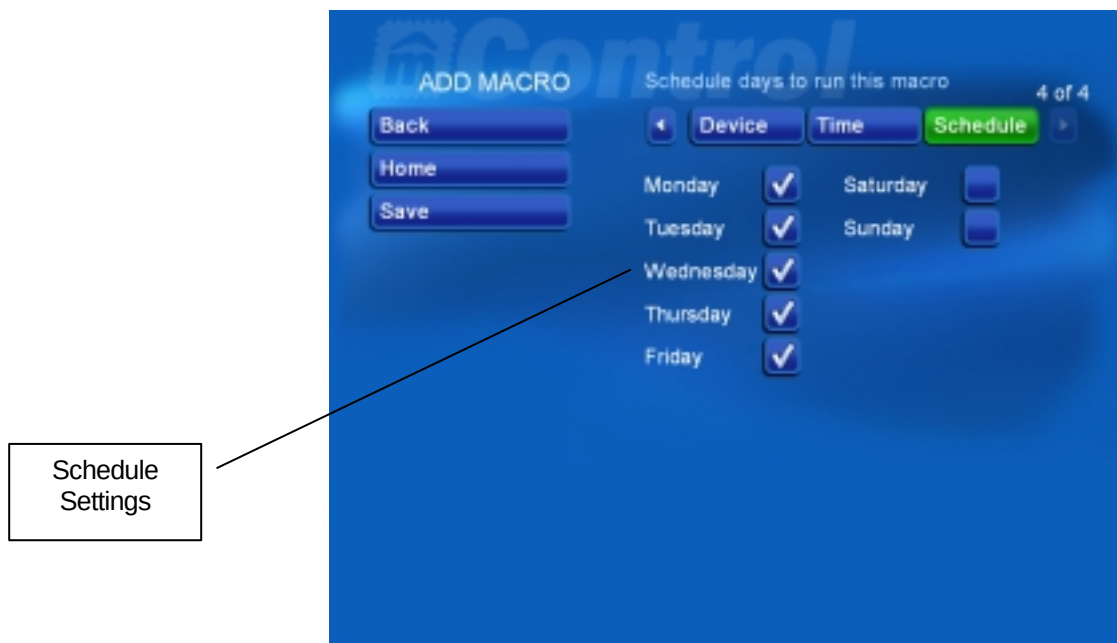
This section provides the following configuration options:

- **Enable** – Checking this option enables time triggering for this macro
- **Triggered By** – Define the time for this macro to initiate.

Triggered By Options	Comments
Specific Time	Start the macro based on a specific time of day
Sunrise and Sunset	Start the macro based on calculated sunrise/sunset for each day. An offset from the sunrise/sunset can be selected to trigger the macro earlier or later than sunrise/sunset. The calculation for sunrise/sunset is performed using location settings in the configuration area of mControl. The calculated time including offset will be shown underneath the settings buttons.

Macro Configuration (Schedule)

This section allows you to define the days on which the macro will be executed.

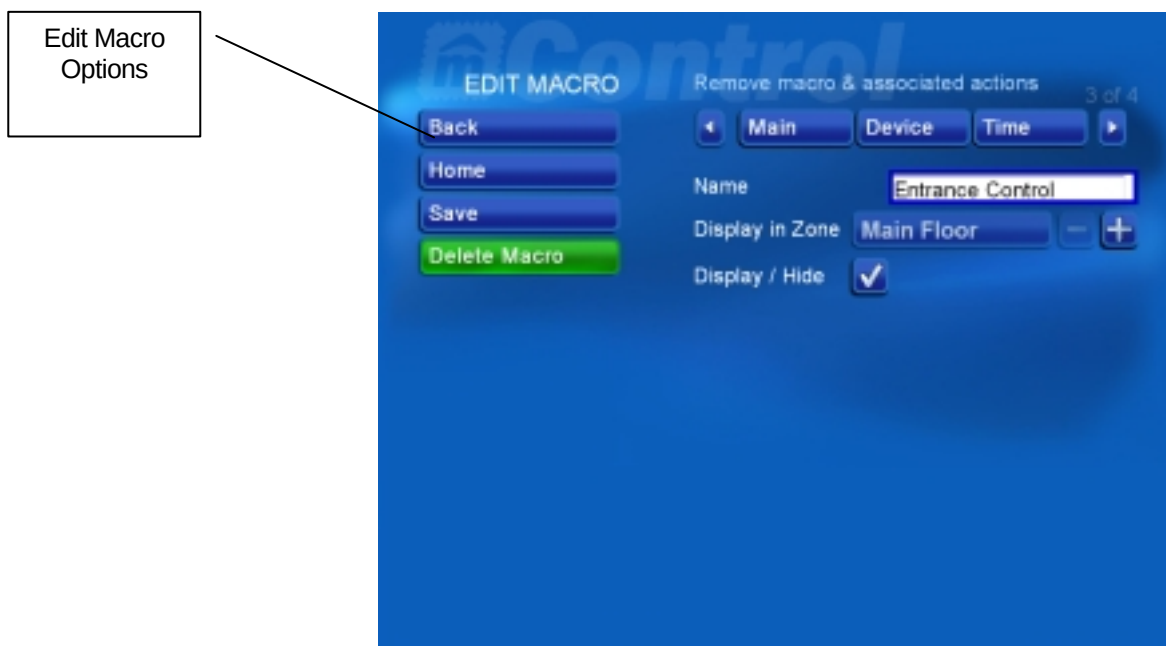


This section provides the following configuration options:

- **Schedule** – Select the days which the macro will be executed

Edit Macro Screen

The Edit Macro Screen allows editing of an existing macro.



Add Macro Options

The Add Macro Options buttons provide the following functions:

- **Back** – goes back to the Automation Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current macro and returns to the Automation Screen
- **Delete** – delete the macro

Action List Screen

The Action List Screen allows modifying the actions associated with an existing macro.



Action List Options

The Action List Options buttons provide the following functions:

- **Back** – goes back to the Edit a Macro Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the current action list configuration for the macro
- **Add Action** – create a new action; goes to Edit Action Screen
- **Edit Macro** – allow editing of the name and trigger type of the macro; goes to the Edit Macro Screen

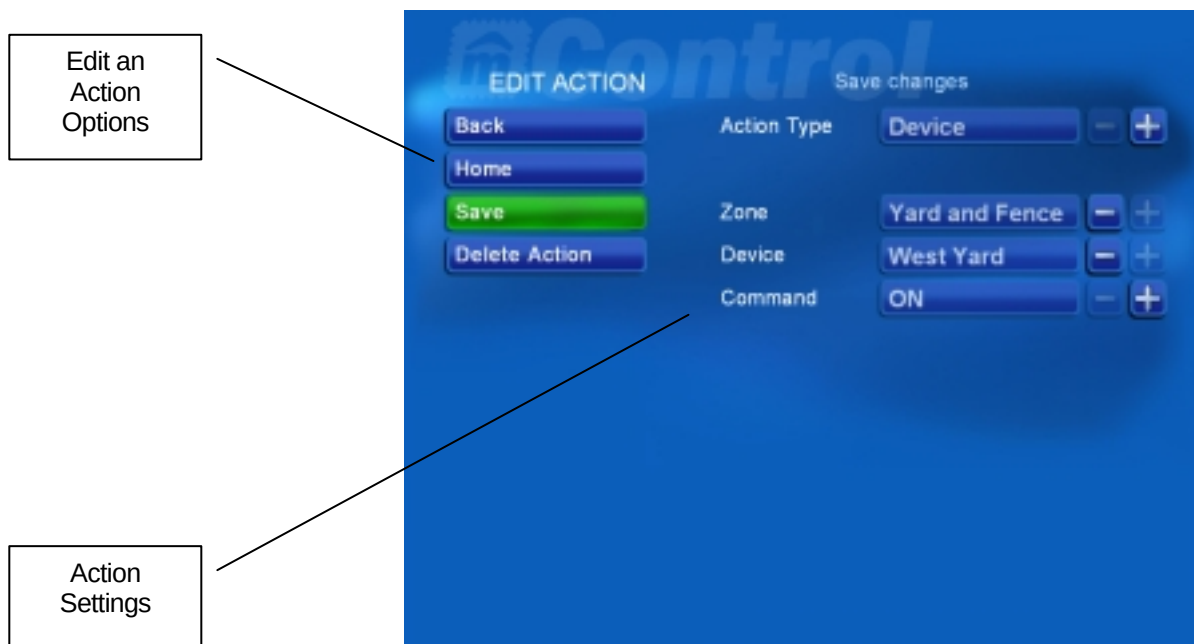
Action List Settings

This section provides the following options:

- Enable/Disable Action – by checking (enabling) or un-checking (disabling) the action will determine if this action is executed if the macro is run
- Action Edit – by cursoring to a action name and pressing OK, access to the Edit Action Screen is provided
- Action Execution Order – by pressing on the UP/DOWN buttons, the execution order of the action within the macro is modified

Edit an Action Screen

The Edit an Action Screen allows modifying actions.



Edit an Action Options

The Edit an Action Options buttons provide the following functions:

- **Back** – goes back to the Action List Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current action and returns to the Action List Screen
- **Delete Action** – deletes the current action and returns to the Action List Screen

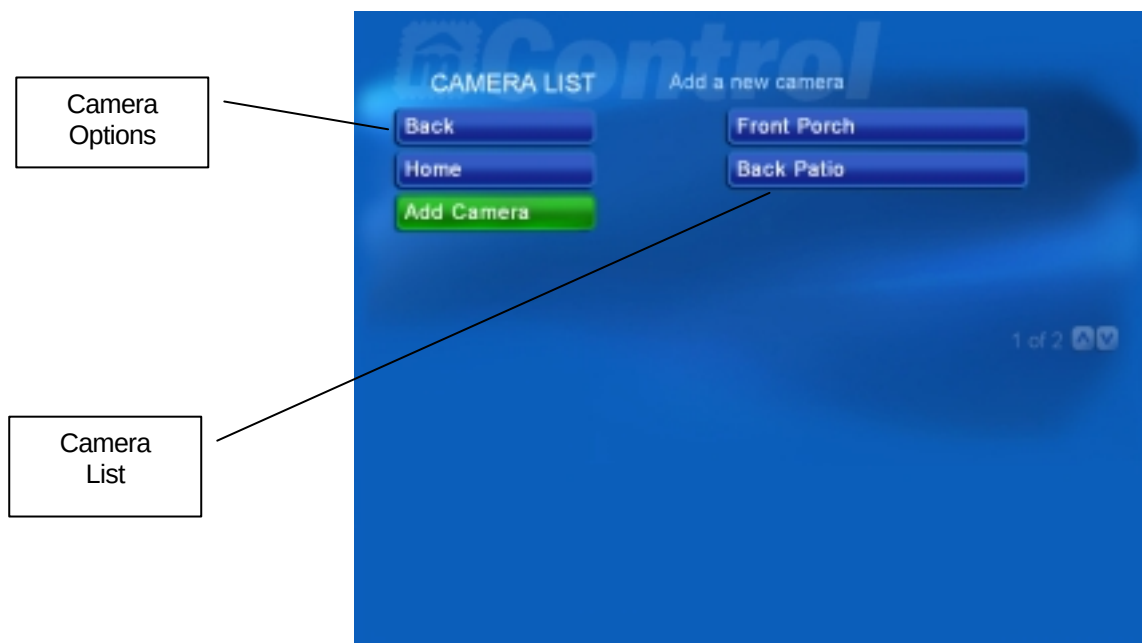
Action Settings

This section provides the following configuration options:

- Action Type – the type of action to execute. Action types include:
 - o Device – perform a specific device command; for example, turn “Porch Lights” in the “Backyard” ON. Select a device command by defining the following parameters:
 - Zone – the zone in which the device is in
 - Device – the device to command
 - Function – the function to be performed by the device
 - o Delay – perform a delay in the macro. A delay is defined by the following parameters:
 - Hours – number of hours to delay
 - Minutes (in 5 minute increments) – number of minutes to delay
 - o IR – send an IR command. The required parameters are:
 - IR Command – the IR command that will be sent as part of this action. This command was “Learned” or entered by cutting and pasting raw CCF text in the IR Command section of mControl
 - IR Device – the device (or “port”) from which the IR command is to be sent from. For the case of Global Caché ports, please refer to your Global Caché user manuals.

Camera Screen

The Camera Screen allows modifying the configuration of existing or new cameras.



Automation Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Add Camera** – allows a configuration of a new camera

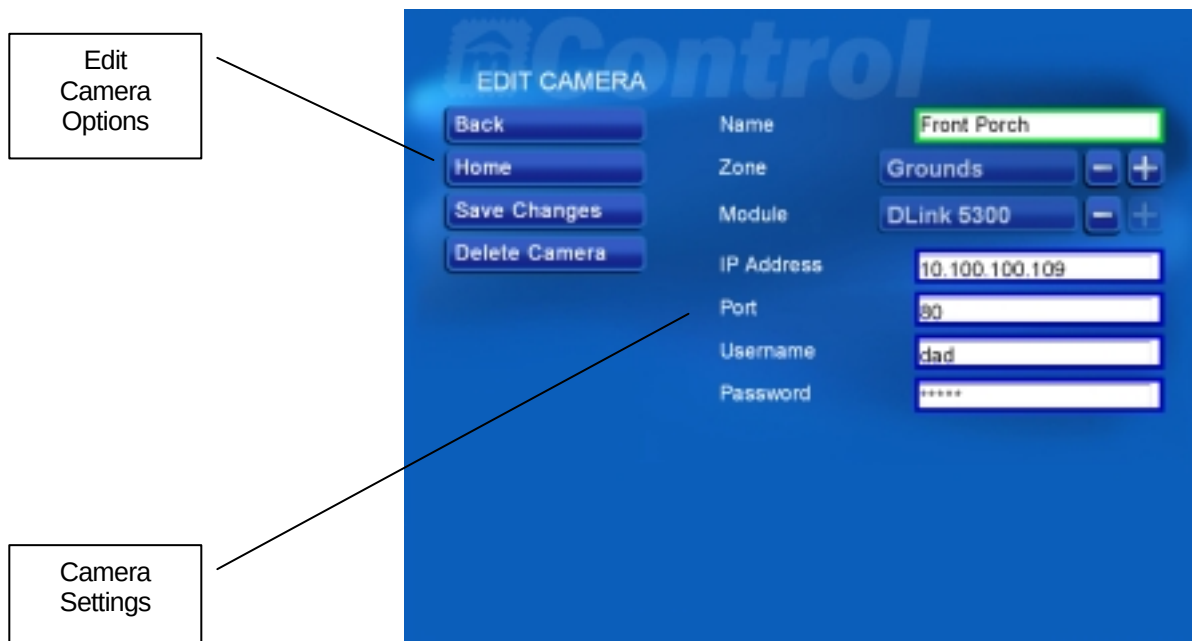
Camera List

This section provides the following configuration options:

- **Edit Camera** – by cursoring to a camera name and pressing OK, access to the Edit Camera Screen is provided

Add Camera and Edit Camera Screens

The Add Camera and Edit Camera screens allow for the configuration of a camera.



Edit Camera Options

The Edit an Action Options buttons provide the following functions:

- **Back** – goes back to the Camera Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current action and returns to the Camera Screen
- **Delete Camera** – deletes the camera and returns to the Camera Screen

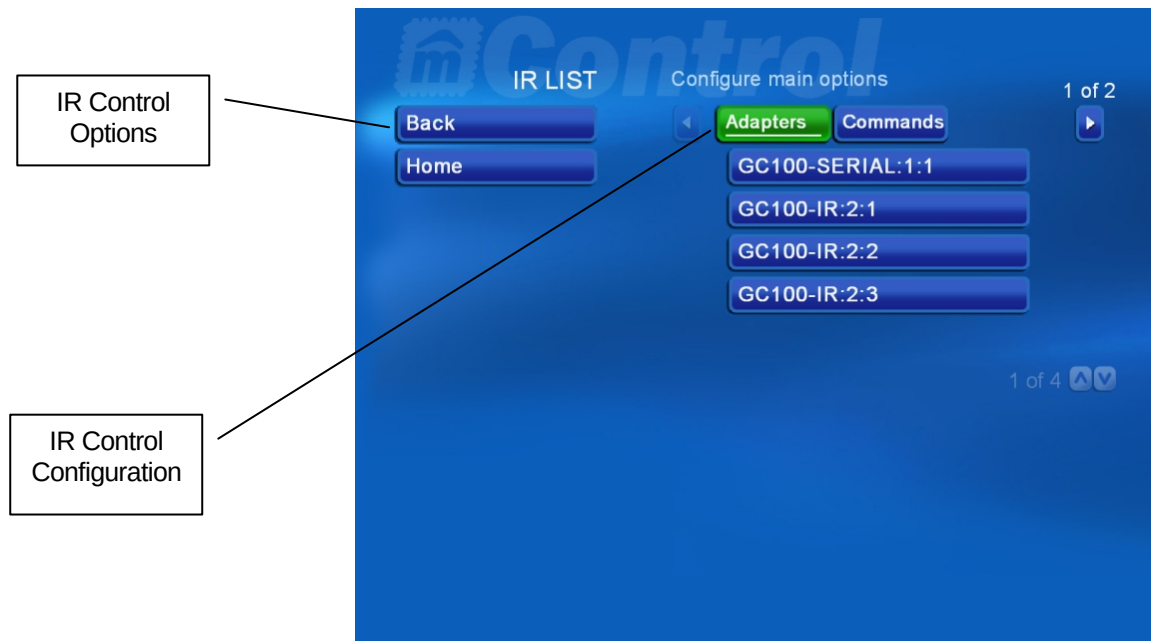
Camera Settings

This section provides the following configuration options:

- **Name** – the name of the camera (Text entry, up to 16 characters)
- **Zone** – the location of the camera
- **Camera** – the camera type (refer to the list provided in Supported Hardware)
- **IP Address** – the IP address of the camera
- **Port Address** – the http port used by mControl to talk with the camera (usually 80)
- **Username** – username for login
- **Password** – password for login

IR Control Screen

The IR Control screen allows modifying the configuration of IR functionality.



IR Control Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen

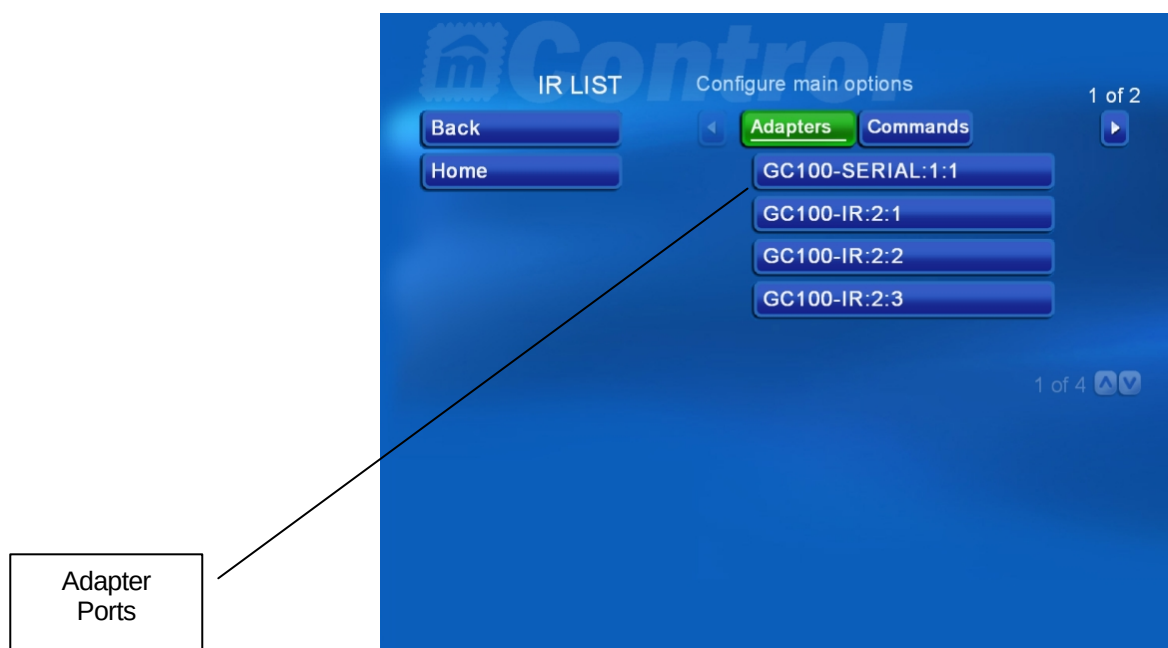
IR Control Configuration

This section provides the following configuration options:

- **Commands** – add, modify and delete IR commands
- **Adapters** – view available adapter ports. These correspond to the available Global Caché ports available.

Adapters Ports

View the IR ports available for sending commands to.



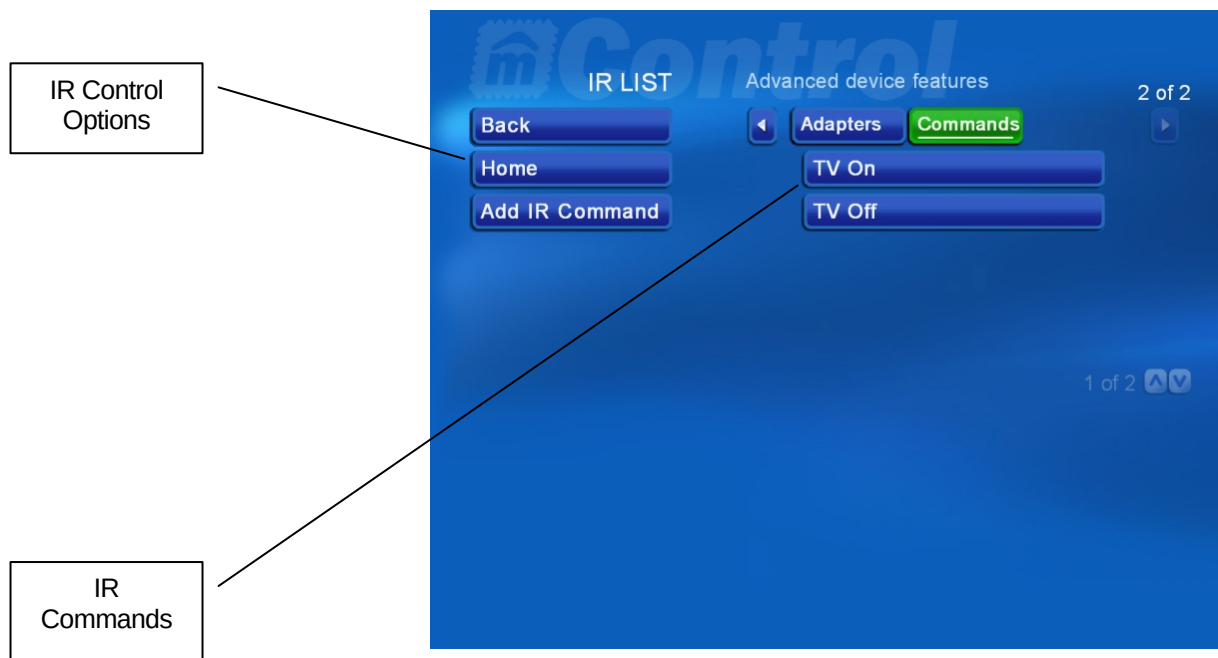
Adapter Ports

When you select the Adapters tab, this screen provides a list of all the available adapter ports. These ports are used to send and receive IR commands. Use one of these ports in macro actions to define the destination location of the IR command.

mControl currently only display the ports, as configured within the Global Cache adapter – you can not edit, delete or add ports. For more information on Adapter Ports, please refer to your Global Caché user manual.

IR Commands

Shows a list of all IR commands and allows creation of new IR commands.



IR Command Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Add IR Command** – allows creation of a new IR command

IR Commands

This section shows the list of IR commands available for macros.

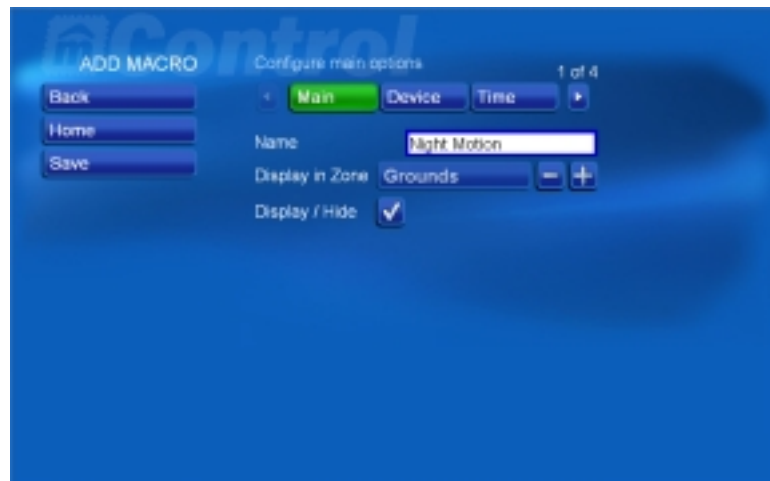
Advanced mControl Functionality

Using Macros

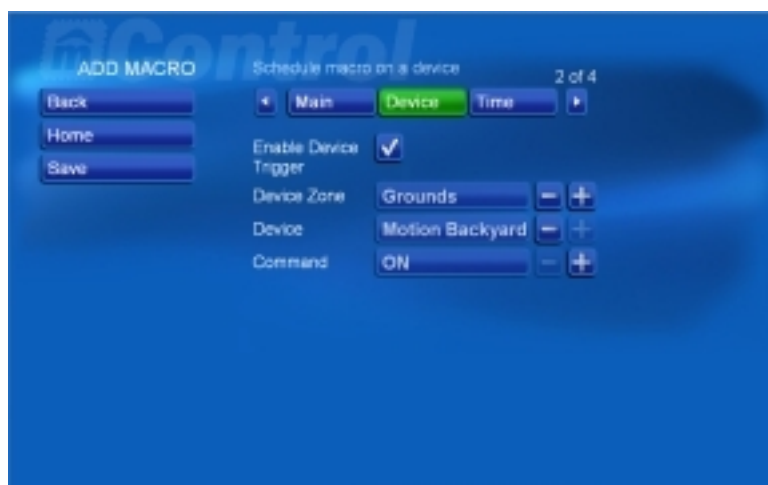
Device Triggered Macros

Use “Device” triggered macros when you need respond to a status change of a particular device. For example, if a motion detector goes off, you may want to turn on a set of lights for 5 minutes and sound a chime.

1. Create the Macro
 - a. Navigate to the “Settings” page
 - b. Select the “Automation” option
 - c. Select the “Add Macro” option
 - d. Select the “Main” tab and enter the information required to create the macro, including:
 - **Name** – the name of the macro
 - **Zone** – the zone to assign the macro within
 - **Display** – to enable the display of the macro within the zone



2. Define the “Device” trigger, which is the event which will start the macro, by navigating to the “Device” tab and then entering the information required, including:
 - **Enable** – enables the device trigger capability
 - **Device Zone** – the zone in which the triggering device is located
 - **Device** – the triggering device (e.g., the motion detector)
 - **Command** – the change to look for to trigger the device



3. Add an action to take, by selecting the “Add Action” option.



4. Select the action type to take, either Device or Delay.
 - **Device** – select a device, by selecting the zone in which the device is defined and the device name, and a command to send to the device.
 - **Delay** – select the amount of time to delay (hours, minutes and seconds).



5. Continue steps 3 and 4 until you have defined all the actions required.

The following sample shows a set of actions to take upon receipt of a motion detector going off. In this sample, the “Backyard lights” come on, an “Intruder chime” is sounded and after 5 minutes, the “Backyard lights” are turned off.



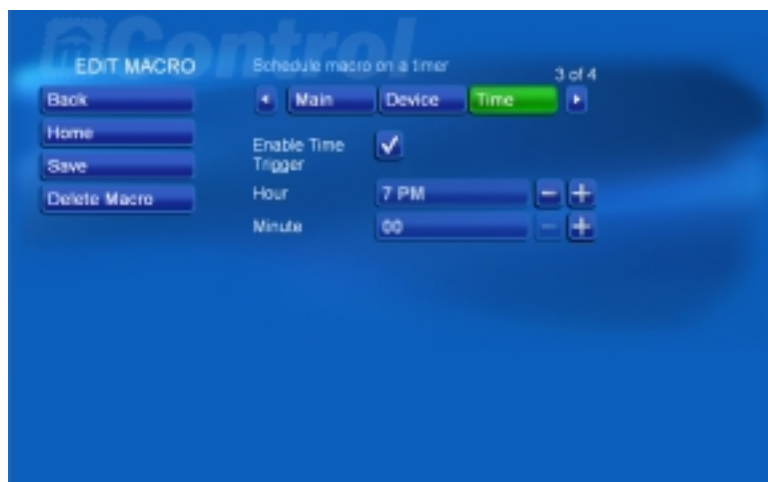
Time Triggered Macros

Use “Time” triggered macros when you need perform home automation functions at a particular time. For example, you may want to turn on lights at 7:00pm and then turn them off at 11:00pm.

1. Create the Macro
 - a. Navigate to the “Settings” page
 - b. Select the “Automation” option
 - c. Select the “Add Macro” option
 - d. Select the “Main” tab and enter the information required to create the macro, including:
 - **Name** – the name of the macro
 - **Zone** – the zone to assign the macro within
 - **Display** – to enable the display of the macro within the zone



2. Define the “Time” trigger, which is the time which will start the macro, by navigating to the “Time” tab and then entering the information required, including:
 - **Enable** – enables the time trigger capability
 - **Hour/Minute** – the time when the trigger should happen



3. Add an action to take, by selecting the “Add Action” option.

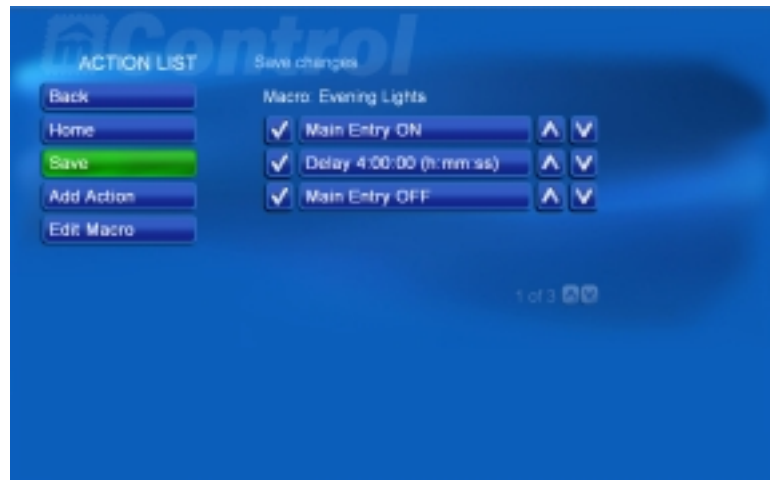


4. Select the action type to take, either Device or Delay.
 - **Device** – select a device, by selecting the zone in which the device is defined and the device name, and a command to send to the device.
 - **Delay** – select the amount of time to delay (hours, minutes and seconds).



5. Continue steps 3 and 4 until you have defined all the actions required.

The following sample shows a set of actions to take upon the time becoming 7:00pm. The “Main Entry” light is turned on and after 4 hours, it is turned off.



Setting up a Camera

1. Follow the instructions provided with your D-Link camera to complete the hardware set-up, including establishing the wired or wireless network and connecting power.
2. Use the D-Link software's IP Installer option to find the available cameras. Click on the "Link" button to configure for mControl. **Please note the IP Address here for future use – mControl requires this information.**



3. Once linked, select the “Configuration” option of the camera.



Once you enter this screen, the D-Link software automatically loads a MPEG4 ActiveX component which allows you to view the camera. This procedure must be followed to load the ActiveX object on each client machine you wish to view the camera.



4. Navigate to the “Advanced” tab, then select the “Network” option. For the HTTP Port enter “29990” (as shown in the below graphic).

Once you do this, you can only access the camera by specifying this port number. For example, on Internet Explorer, you would enter <http://<camera IP address>:29990/>



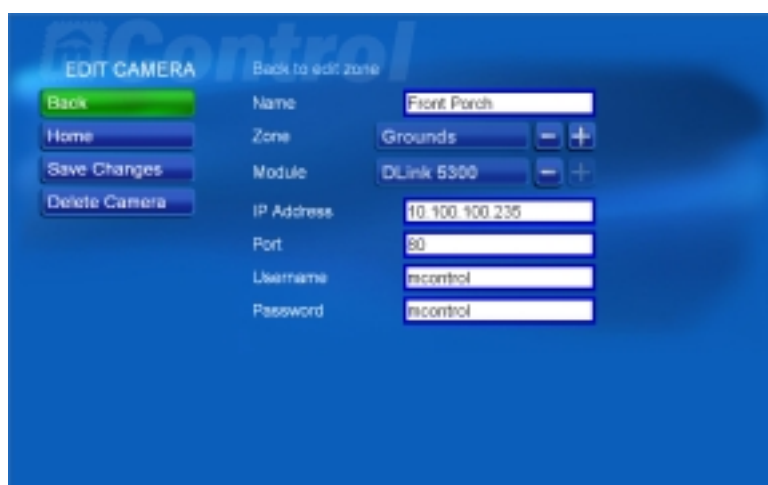
5. Navigate to the “Tools” tab, then select the “Admin” option. For security reasons, you may create an mControl user by assigning a Username/Password. **Please note the Username/Password here for future use – mControl requires this information.**



The screenshot displays the mControl v1 (Home Edition) web interface. On the left sidebar, there is a camera icon labeled 'DCS-2100+' and a vertical menu with buttons for 'Admin' (highlighted in yellow), 'System', 'Applications', and 'Default'. The main content area has a top navigation bar with tabs: 'Home', 'Advanced', 'Tools' (highlighted in yellow), 'Status', and 'Help'. Below the 'Tools' tab, the 'Administrator settings' section is visible. It includes fields for 'New password' and 'Confirm password' with a 'Save' button. The 'Add user' section has a 'User name' field containing 'mcontrol' (highlighted with a yellow box) and a 'User password' field containing '*****'. There is a checkbox for 'Permit to access D/L/O' and an 'Add' button. The 'Delete user' section has a 'User name' dropdown menu showing '-- no user --' and a 'Delete' button. At the bottom, the 'Guest account' section has a checkbox for 'Allow "demo" account to view'.

6. Once completed, you will either have to re-power (or reset) your camera.

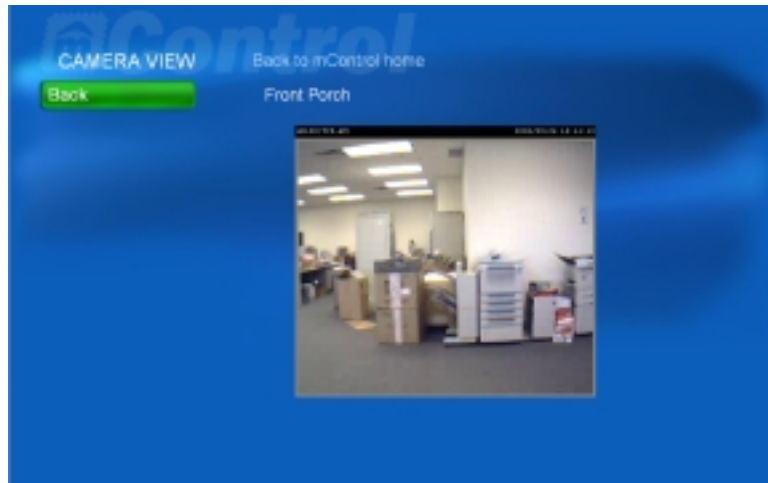
7. Now you are ready to add the camera to mControl software.
 - a. Navigate to the “Settings” page
 - b. Select the “Camera” option
 - c. Select the “Add Camera” option
 - d. Enter the information required to connect to the camera, including:
 - **Name** – the name of the camera (for example, “Back Porch”)
 - **Zone** – the zone that the camera should be displayed within
 - **Model** – the camera model
 - **IP Address** – as per step #2 of this process, enter the IP address
 - **Port** – mControl requires this to be set to 80
 - **Username** – as per step #5, enter the Username
 - **Password** – as per step #5, enter the Password
 - e. “Save Changes” and return



8. View the camera from the “Zone View” screen

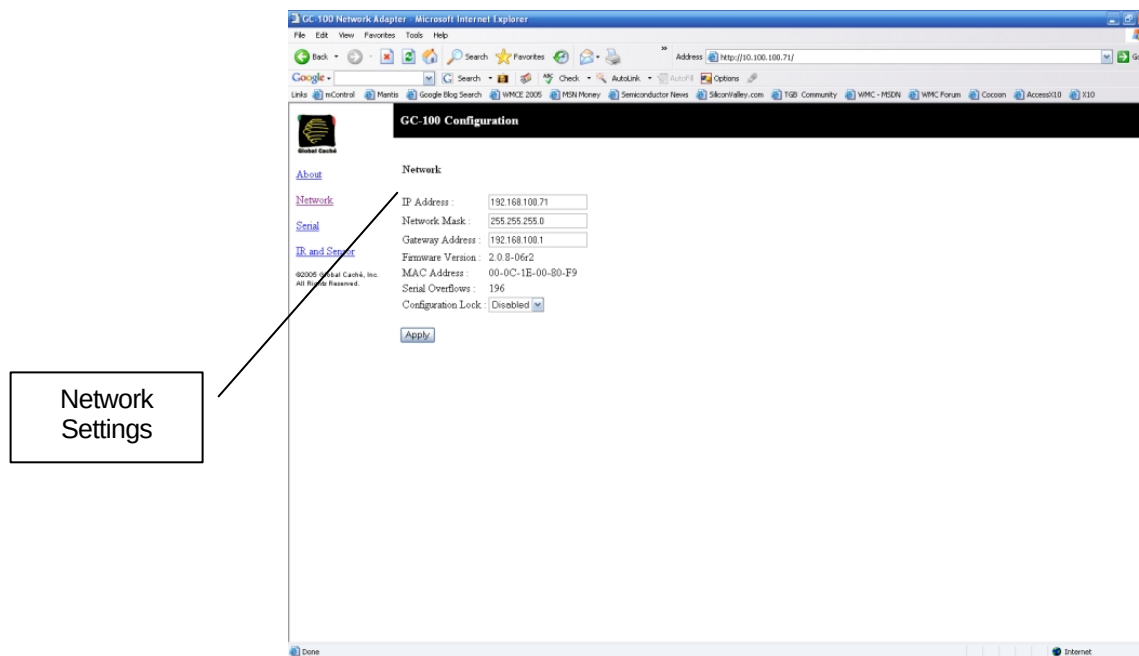


9. Navigate to the “Play” button on the camera device. If you press OK, a full-screen will be displayed.

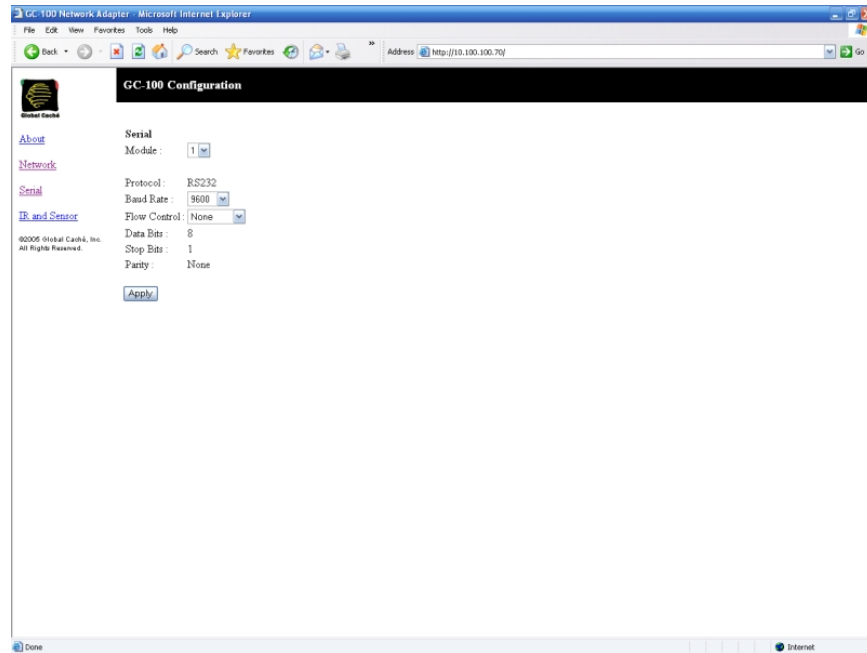


Configuring and Using a Global Caché IR System

1. Follow the instructions provided with your Global Caché Network IR Adapter to complete the hardware set-up, including establishing the wired or wireless network and connecting power.
2. Connect to the GC-100 Network Adapter using the default IP address and configure the IP Address, Network Mask and Gateway Address to be compatible for your network.



You may also want to configure the Port settings for each of the ports available on the GC-100 Network Adapter – mControl use these settings to send and receive IR commands.



3. Enable and configure the GC-100 Network Adapter within mControl, by editing the configuration settings in the “mServer.exe.xml” located in the C:\Program Files\Embedded Automation\mControl\server directory.

Open the “mServer.exe.xml” file using Notepad or equivalent text editor, find the section which has configuration settings for the GC-100 Network Adapter and make the following changes:

- Load the GC-100 Network Adapter driver into mControl – ensure that the load parameter for the adapter is “Y” (see underlined section below).
- Provide the proper IP Address for the GC-100 Network Adapter – ensure the value of the IP parameter matches the IP Address entered during step #2 (see underlined section below).

```
<adapter base="GC100" load="Y" assembly="GC100.dll"
driver="EmbeddedAutomation.mServer.Adapters.GC100Manager">
  <aparam name="DISPLAY-AS" value="GC-100"/>
  <aparam name="OTHER-NAMES" value="GC-100-12|GC-100-18"/>
  <aparam name="DESCRIPTION" value="GlobalCache Network Adapter"/>
  <aparam name="SUPPORTS" value="GC100"/>
  <aparam name="APROTOCOL" value="GC100"/>
  <aparam name="PORTS" value="4998"/>
  <aparam name="ip" value="192.168.100.71" />
</adapter>
```



To enable any changes in adapter XML settings, you must restart the mControl Automation Service, which during initialization reads the XML files.

4. Navigate to the IR Control section and learn an IR command.

From the Settings page, select IR Control. From the IR Control page, select the “Commands” tab. Select the “Add IR Command” button to add a new IR command.

On the Add IR Command page, type the name of the IR command, say “TV On”. There are two ways to enter the IR command:

- a. If you have a GC-IRL (Globale Cache IR Learner adapter connected to the GC-100 Network Adapter), you can learn the IR command. To do this, press the “Learn” button and within a 5 second time enter the command by pressing the remote control button while pointing at the GC-IRL. The command which is seen by the GC-IRL will appear in the text box in CCF format as shown in the diagram below.

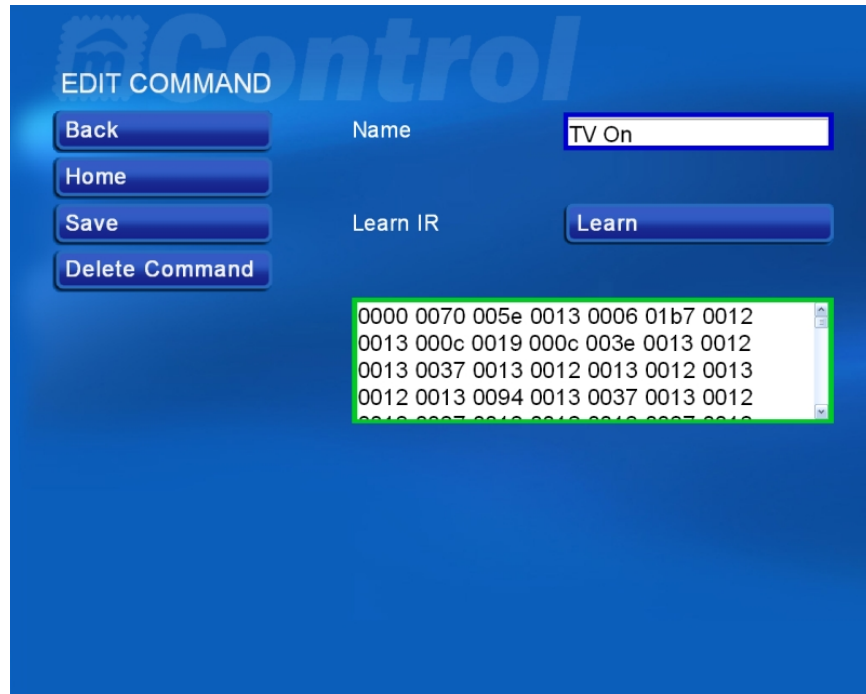
For more information on CCF formats, please refer to:

http://www.geocities.com/jpollock_2000/ccf.htm



mControl only supports IR commands less than 900 characters.

- b. If you have access to CCF (Component Control File) codes for the command, it is possible to cut and paste them directly into the text box area.
 - To get to CCF codes for your component, we recommend <http://www.remotecentral.com/>
 - To convert binary CCF files to text format, we recommend utilities like the CCF Tools utility (also found on <http://www.remotecentral.com/>).



EDIT COMMAND

Back Home Save Delete Command

Name TV On

Learn IR Learn

```
0000 0070 005e 0013 0006 01b7 0012
0013 000c 0019 000c 003e 0013 0012
0013 0037 0013 0012 0013 0012 0013
0012 0013 0094 0013 0037 0013 0012
0012 0007 0012 0012 0012 0007 0012
```

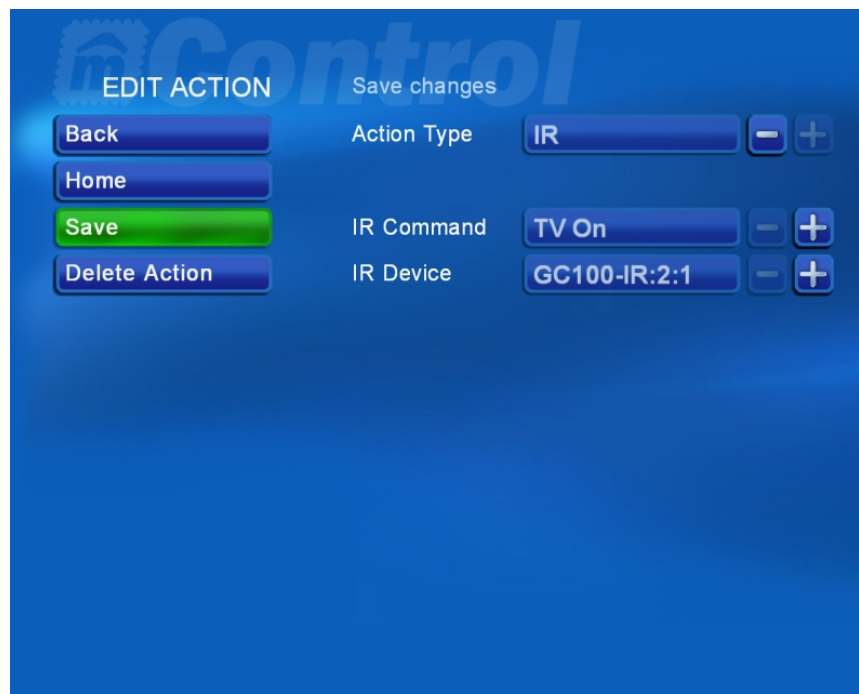
For more information on CCF formats, please refer to:
http://www.geocities.com/jpollack_2000/ccf.htm



mControl only supports IR commands less than 900 characters.

5. Use IR commands within mControl Macros, to control electronic components.

Within any macro, add an action of type “IR”, selecting the specific command IR command saved as part of the step 4.



IR Commands and Windows XP Media Center Edition 2005

A reference of Windows XP Media Center Edition 2005 CCF commands can be found here:

<http://www.remotecentral.com/cgi-bin/files/rcfiles.cgi?kw=media+center&fc=--&area=pronto&db=&br=&dv=&dt=&so=>

Please note, Windows XP Media Center Edition 2005 utilizes a two-code IR command toggle system to eliminate “bounce” or double keying. The debounce setting of Media Center can be disabled, thereby allowing a single command to represent the IR command. For a good reference on this topic, see: <http://blogs.msdn.com/mswanson/archive/2004/12/01/272766.aspx>.

Configuring mControl Clients

Using mControl from a remote PC using Internet Explorer

1. Start Internet Explorer and enter the following in the address area: `http://<mControl PC>:29990/default.aspx`, where "<mControl PC>" is the name or IP address of the PC on which mControl was installed on.

Adding mControl to a remote Windows XP Media Center Edition PC



Please note, this is an unsupported feature of mControl and once implemented, requires manual editing of your Windows registry – the mControl uninstaller does not remove these settings. We recommend making a back-up of your Windows registry before any substantive changes.

1. Copy the mControl.mcl file located in the "C:\Program Files\Embedded Automation\mControl" directory to the new client machine's "C:\Documents and Settings\<user of your choice>\Start Menu\Programs\Accessories\Media Center\Media Center Programs" directory.
2. Edit the file using Notepad to modify the URL, replacing 'localhost' with the name of the new client machine. For example, if your mControl Automation Service machine is called 'MyServer, you would change the URL setting to "<http://MyServer:29990/Default.aspx>".
3. Once the file has been modified, you will be able to access it from the "More Programs" area of the client machine.

Adding mControl to the Start Menu of a Windows XP Media Center Edition PC



Please note, this is an unsupported feature of mControl and once implemented, requires manual editing of your Windows registry – the mControl uninstaller does not remove these settings. We recommend making a back-up of your Windows registry before any substantive changes.

To use this function on a remote PC, first perform the step above to “Add mControl to a Remove Windows XP Media Center Edition PC”.

Only a maximum of two 3rd party items can be added to the “Start Menu” – so if two 3rd party items are already installed on the “Start Menu”, the following steps will have no effect.

1. Using Notepad or equivalent text editor, copy the following into a file called mControl.reg:

```
Windows Registry Editor Version 5.00
[HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Media
Center\Extensibility\Categories\Start Menu\{3de6904a-d9c7-4ef9-b77d-
c1216b39161f}]
"AppID"="{aebf238a-a1c5-4354-ba23-e693cb9f219c}"
"TimeStamp"=dword:0add6130
"Title"="mControl"
"URL"="http://localhost:29990/Default.aspx"
```

2. After saving the file, double-click on the file or, within Explorer, perform a right-click and select the “Merge” option. You will be asked if you want to add the information to the Windows registry. Once you agree, the registry settings will be added and mControl will be available on the “Start Menu” when Media Center is re-started.

Configuring mControl

mControl allows configuration of User and System settings within XML files. Please ensure all changes comply with XML - improper XML may affect the operation of mControl.



To enable any custom settings, you must restart the mControl Automation Service, which during initialization reads the XML files. Please make a back-up of any XML file before making changes.

Custom User Settings

Custom user settings can be made in the “mControlDataSet.xml” file, located in the “C:\Program Files\Embedded Automation\mControl” directory.

Adding Custom Images

Add a <device-image> element to the XML data.

- Images of type PNG, GIF, and JPEG are preferred. Image size should be 120 by 120 pixels for best display – other sizes will be scaled up/down to fit and may appear distorted.
- A blank image, called “Blank.gif” is provided in the “C:\Program Files\Embedded Automation\mControl\images\device” directory. You may use this image as a template for creating a custom device image.

In this sample, a “Chime” device, which uses the “Chime.gif” image has been added (shown in red).

```
<images>
  <device-image>
    <image-name>Chime</image-name>
    <image-file>Chime.gif</image-file>
  </device-image>
  <device-image>
    <image-name>Lamp</image-name>
    <image-file>Lights.gif</image-file>
  </device-image>
</images>
```

Adding Custom DIM Granularity Values

Under the <configuration> element within the XML file is the <dimvalues> element, which defines the DIM granularity values.

In the following sample, a 33% DIM granularity has been added (as shown in red).

```
<configuration>
  <time-offset>-60|-45|-30|-20|-15|-10|-
    5|+0|+5|+10|+15|+20|+30|+45|+60</time-offset>
  <dimvalues>10|20|25|33|50|75</dimvalues>
  <delay-hours>0|1|2|3|4|5|6|8|10|12|24</delay-hours>
  <delay-minutes>00|01|02|03|04|05|10|15|20|30|45</delay-minutes>
  <delay-seconds>00|01|02|03|04|05|10|15|20|25|30|40|50</delay-
seconds>
</configuration>
```

System Configuration Settings

System configuration settings can be made in the “mServer.exe.xml” file, located in the “C:\Program Files\Embedded Automation\mControl\server” directory.

Version History

v1.31 – released December 2005

Issue #	Description
317,341,350, 354, 356	Improved robustness for installation, logging and copy protection, including: - Installation in non-default directory or drive - Size and number of log files can be set - Proper version is shown in “More Programs” area of MCE - Automatic upgrading of v1.1x database adds necessary fields
158,336,348	Improved robustness for editing of mControl devices, zones and related data.
323,355	Improved robustness for Macro handling, including: Will not allow selection of undefined addresses as triggers
205,206,225, 299,302,313, 329,340,343, 345,347,351, 360,361,366, 367,368,372, 373,377,380	Improved robustness related to INSTEON and X10 support, including: - Elimination of spurious exception errors - Improved automatic handling of plugging and unplugging of CM15A and 2414U - Behavior for INSTEON devices changed to reflect expected behavior instead of X10 behavior - Multiple X10 ON commands handling - Devices, if linked in mControl/2414U, will update status if ControlLinc, SwitchLinc or KeypadLinc also have them linked and change status - Incoming and outgoing X10 messages on 2414U INSTEON adapter - Improved robustness for automatic linking and unlinking of devices in PowerLinc’s database

v1.30 – released November 2005

Issue #	Description
238	Confirmed support of Windows XP Media Center Edition 2005 Rollup 2
33,221,228, 235,236,268, 269,274,275, 280,297,307, 311,322	Enhanced Macro support, including: - Support for sunrise and sunset macro triggers. Configuration allows for entry of longitude and latitude, thereby allowing mControl to calculate the sunrise and sunset for the day. Offsets can be added to control desired trigger points relative to sunrise and sunset. - Greater than 6 hours for delays - Enhanced error checking for incorrect macro triggers and actions
100,169,259, 277,278,296, 312,321	Added support for IR functionality, including: - Support for the Global Caché Network IR Adapter, including “learning” functionality (using GC-IRL module) - Support for raw Component Control Files (CCF), thereby allowing manual entry, using cut and paste, of known IR commands
90,193,203, 242,243,261, 265,266,267, 270,276,282, 287,300, 306	Enhanced configurability, including: - Selectable styles (or “skins”). Default style is now non-animated Blue, to ensure optimum performance for MCE environments. - Expanded XML configuration files and related documentation. Please refer to the “Configuring mControl” section of the mControl User Manual

v1.30 – released November 2005 (continued)

Issue #	Description
94 ,133,139, 164,199,222, 236,240,262, 275, 280,295	Performance improvements, including: ▪ mControl no longer throws an exception if stopped or restarted ▪ Memory management is no longer affected by presence or absence of internet connection ▪ Performance of the mControl client, when used in conjunction with Shared View Port (SVP) is greatly improved ▪ Improved entry field validation throughout
218,225,241, 243,249,308, 309, 310,315, 318, 319,328, 331	Enhanced support of the INSTEON protocol, including: ▪ Added automatic linking and unlinking of INSTEON devices. All devices added to mControl zones will automatically be added to the 2414U PowerLinc's memory, thereby allowing the PowerLinc to recognize the device during 2-way communications. If the device is deleted from mControl, it will be automatically removed from the PowerLinc's memory. This eliminates the need for the user to do manual linking and unlinking. ▪ Added X10 to INSTEON command translator. Entries in the mServer.exe.xml configuration file will allow incoming X10 signals to be translated into a specified INSTEON address. This is particularly useful for cases where hybrid systems exist and rely on a X10-based back-end controller and INSTEON-based lighting control. ▪ Confirmed support for 2486D (INSTEON KeypadLinc) ▪ Improved incoming X10 event handling ▪ INSTEON Adapter/Device and FAQ sections has been updated
130,177,200, 212,231,232, 233,239	Improvements to the mControl installer, including: ▪ mControl database and license are backed up (.cpy extension) ▪ Improved installation of 3rd party software (e.g., CM15A X10 drivers) ▪ Default install is for "Everyone" to ensure that mControl is visible to MCE Extenders ▪ DLLs are properly registered and loaded in .NET Global Assembly Cache
168,195,214, 216, 242	Documentation improvements, including: ▪ Provided a section which describes how to remote mControl to another PC using either Internet Explorer or as a part of the "More Programs" section of Media Center ▪ Provided a section which describes how to add mControl to the "Start Menu" of Media Center ▪ Provided a section related to Custom User and System Configuration Settings. ▪ Provided information on how to use mControl when no active Internet connection is established.

v1.20 – released September 2005

Issue #	Description
13, 67	User interface will now update, in real-time, any device status changes. These changes may have been initiated by the user, by another user on a remote client or via macro actions.
31	Added support for security cameras. Specifically, the following cameras are now supported: ▪ D-Link DCS-2100+ ▪ D-Link DCS-5300W
90,131, 179	An XML file has been created to hold device configuration information. Users may now: ▪ Create custom images for a device, using "blank.gif" ▪ Rename devices (e.g., for localization purposes) ▪ Add/remove devices from the device list
93,129, 162,187	Page Up/Down buttons are now fully implemented and are usable for touch screen applications.
132,134, 150,153, 158,159	Macro functionality has been enhanced: ▪ Bright/Dim are available as action commands ▪ Added "day" settings to allow running of a macro on specific days ▪ Timer macros are now stored properly in the mControl database ▪ Macros now reference Zones/Devices properly ▪ Finer granularity on delay action steps
137	External INSTEON device changes can be used to trigger events. NOTE: To avoid infinite recursion, please ensure any actions within the macro do not retrigger the same macro.
170	Configurable Dim/Bright granularity is supported for each dimmable device.
136,138, 143,145	INSTEON support enhancements, including: ▪ Successive INSTEON commands issued within a macro will now properly execute. Previously, it was possible that some commands would not be processed due to the capability of the 2414x adapter. ▪ Remote commands, for example, from a ControlLinc or a SwitchLinc are now recognized by the adapter.
184,197	General usability enhancements, including: ▪ Confirmed Windows XP Home Edition support ▪ Installer has been enhanced to allow mControl installation in user selected drive and directory ▪ User no longer has to uninstall old version and install new version.

v1.11 – released on August 3, 2005

Issue #	Description
	The mControl User Manual, specifically the "Using mControl" section, has been updated to reflect the changes made for mControl v1 (Home Edition) release
135,136	Several enhancements to the INSTEON protocol driver including: ▪ All outgoing commands check if PowerLinc (USB) adapter is connected or disconnected, and will update the mControl database accordingly ▪ A 2 second timeout (and retry) strategy is included to ensure robust communications. ▪ Devices within the mControl database will be updated upon receipt of a corresponding event. Previously, the status change was only recorded if it was initiated by an mControl INSTEON command

v1.10 – released on July 21, 2005

Issue #	Description
10	The mControl User Interface Client is now fully supported on browsers based on Internet Explorer 6.
16, 17	Validated support for additional X10 adapters, modules, transceivers, remotes and sensors. In addition to supporting these devices within mControl, the User Manual and web site have been updated to reflect this support.
26, 65	To allow easier entry of devices, upon selecting Add Device, mControl will preload the house and adapter, based on the previous device entered.
29, 71, 82, 83, 88, 99	Improvements to the mControl User Interface Client including: ▪ Additional device images have been provided. ▪ Improved cursoring and paging within zones with many devices ▪ Improved consistency in screen names and navigation ▪ Consistent location of navigation and add/delete/edit buttons ▪ Ability to enable/disable Macros with single check box ▪ Error screens with recovery suggestions
54, 57	Increased robustness to CM11A adapter interface. A command retry strategy has been added to ensure that all commands are sent.
61	Older versions of mControl database are now automatically converted to latest version.
77, 78, 106	Managed deletions of Devices and Zones: ▪ A warning is given upon Device Deletion to alert that related Macro Actions may be affected. If confirmed, all associated Macros Actions are deleted. ▪ A warning is given upon Zone Deletion to alert that underlying Devices and associated Macros and their Actions may be affected. If confirmed, all underlying Devices are now marked as deleted and all associated Macros and their Actions are deleted.
101	User-selectable logging as defined in "mServer.exe.config" configuration file. The default setting is ALL.
102	mControl now supports COM1 through COM4 ports for all serial-based adapters.
103	Support for INSTEON protocol, specifically the 2414 PowerLinc adapter. mControl allows sending commands to both INSTEON and X10 modules. In addition, mControl will process commands received on this adapter. Please refer to the "Supported Automation" section of this manual for more details.
104	mControl now supports receiving X10 messages using a CM15A adapter. Received power line and RF commands can be processed to update the database or launch Device Macros. Please refer to the "Supported Automation" section of this manual for more details.

v1.00 (Release Candidate 1) – released on June 13, 2005

Issue #	Description
15, 34, 48	mControl Automation Service now provides user interface screens to mControl User Interface Client. IIS is no longer required.
40	Updated software interface for X10 CM15A ActiveHome Interface (USB)
81, 82, 84, 91, 93	Improvements to mControl User Interface Client including: ▪ User will be prompted for saving edits if Back or Home button are pressed ▪ Current location or function is displayed over mControl watermark ▪ Home button for easy return to Zone View screen ▪ Amalgamation of the Create and Edit buttons ▪ Use of mControl logo throughout ▪ Mouse functionality matches remote control functionality

Known Issues

All of the below-mentioned issues will be resolved in future versions of mControl:

Issue #	Description
95	If the mControl Automation Service is not running the mControl User Interface Client does not come up on MCE or IE. There is a "Page Not Found" error. NOTE: Restart mControl Automation Service
79	It is possible to create non-unique device name and zone name combinations. For example, it is possible to create two devices with the same name within a zone or devices with the same address. NOTE: Please ensure that addresses, device names and zones are unique.
69	First time entry in to mControl may take >30 seconds. NOTE: Subsequent entries will be almost immediate.

Error Management

The following summarizes mControl error conditions and suggested actions:

Errors	Description
- AUTOMATION SERVER IS NOT RUNNING - PAGE NOT FOUND - SERVER IS NOT STARTED YET	Please ensure that the mControl Automation Service is running. Use Control Panel's Administrative Tools and select Services. Within the Services manager, cursor to the "mHome Automation Server". If this service is stopped, then right-click to 'Start' or press the play button on the tool bar.
NO ZONES IN DATABASE	In order to create a macro, there must be a minimum of one zone in the system. Please go back and enter a zone before continuing with the automation controls.
SERIAL PORT TIMEOUT EXCEPTION	Please ensure that the CM11A/CM12U adapter is connected to your PC.
- MACRO NOT READY - MACRO ALREADY LOADED	Macro failed. Please retry or review log files.
MACRO ALREADY RUNNING	Macro failed. An instance of this macro is already running.
- PROTECTION FAILED - LICENSE FILE NOT FOUND - VALIDATION OF MODULE FAILED - DEMO LICENSE HAS EXPIRED - LICENSE FILE IS TAMPERED WITH - PROTECTION WRONG TAG - SYSTEM DATE IS TAMPERED WITH	mControl license has expired, is missing or has been damaged. Please contact support@embeddedautomation for further assistance.
SYSTEM ERROR	mControl has encountered an unknown error, please restart mControl and try again.

Frequently Asked Questions (FAQs)

Installation and Start-up

I receive an "Unable to Display Page" error when I try to start mControl from Windows Media Center. The message says "Media Center is unable to load the page <http://localhost:29990/Default.aspx>."

This is because the mControl Automation Service is not running. Please 'Start' the mControl Automation Service, by going to the Control Panel's Administrative Tools and selecting Services. Within the Services manager, cursor to the "mHome Automation Service". Right-click to 'Start' or press the play button on the tool bar.

Can I use Internet Explorer to run mControl?

Yes, mControl will run on Internet Explorer. To start mControl type <http://localhost:29990/> into the Internet Explorer address area.

How do I access mControl from another Windows XP Media Center Edition 2005 machine?

mControl consists of two parts: (a) mControl Automation Service and (b) mControl User Interface Client(s). By default, mControl installs both of these on the same machine. Since the mControl Automation Service supports multiple clients, you can easily add a MCE client(s). (This is particularly useful if you've installed mControl on a Windows XP Professional machine.)

Simply copy the mControl.mcl file located in the "C:\Program Files\Embedded Automation\mControl" directory to the new client machine's "C:\Documents and Settings\<user of your choice>\Start Menu\Programs\Accessories\Media Center\Media Center Programs" directory. Edit the file using Notepad to modify the URL, replacing 'localhost' with the name of the new client machine. For example, if your mControl Automation Service machine is called 'MyServer, you would change the URL setting to "<http://MyServer:29990/Default.aspx>". Once the file has been modified, you will be able to access it from the "More Programs" area of the client machine.

I get a "The trial version of mControl has expired" message. What happened?

The mControl software you are using has been provided for limited time use. This is governed by a form of copy protection. Either one of three things happened to cause the "The trial version of mControl has expired" message: (a) the 30 days you had to review mControl has passed, (b) the mControl license has become damaged, or (c) the system date has been changed.

Please note: if your license has expired, all navigation and viewing functionality will still be available; however, all device control and automation will be disabled.

You can purchase mControl from the Embedded Automation web store.

X10 Automation

I don't see the X10 module I would like to control in the module list on the "Edit Device" screen.

You can add, remove or rename devices by making changes to the "mServer.exe.xml" file. Please refer to the "Configuring Devices" section of the mControl v1 (Home Edition) User Manual.

Can devices controlled by CM11A/CM12U or CM17A X10 adapters be used for "Device" macros triggers?

Only devices connected to a 2414U INSTEON or CM15A X10 adapters can be used for "Device" macro triggers.

I plugged in my CM15A X10 Adapter and Windows asked for driver files. I pressed 'Cancel' but now I see unknown devices (denoted by yellow question marks) in Device Manager. What should I do?

To fix this simply install mControl. mControl will ask to install the required drivers for the CM15A X10 Adapter.

INSTEON Automation

Does mControl work with SwitchLincs?

Currently, mControl can turn on, turn off, dim and brighten SwitchLincs. Even if your SwitchLinc is "registered", they do not send messages back to mControl and as a result, mControl can not display any changes made by users. For example, if you dim a SwitchLinc, mControl does not see this change and hence is not able to update the display on user interface.

We are working with Smarthome/INSTEON to enhance mControl to sense and display SwitchLinc changes, as made by users.

mControl does not appear to receive device triggers, what could be happening? The 2414U INSTEON adapter LED blinks On and Off about every 1 second, what could be happening?

The memory in the 2414U INSTEON Adapter's memory may be "corrupt". Please email support@embeddedautomation.com – we can provide a utility to revert the 2414U to factory conditions.

Support

Log Files

Log files contain journalized information of mControl operation, informational messages and errors. Log files can be found in the following folder: C:\Program Files\Embedded Automation\mControl\logs.

Log files are named mControl<xxx>.log, where <xxx> represents a numeric value. The most recent log file is mControl000.log. If this log is full, it is renamed to mControl001.log and a new mControl000.log is opened for use. Up to 10 log files can exist, named incrementally, via this cascading copying process.

Contact Us

Send us an email to: support@embeddedautomation.com or go to the Support page at www.embeddedautomation.com.